DOCUMENT RESUME

ED 328 722 CE 056 893

AUTHOR Johnson, Ron
TITLE Vocational Qualifications in the Member States of the European Community and Moves towards an Open Market. NCVQ R&D Report No. 2. Towards 1992.
INSTITUTION National Council for Vocational Qualifications, London (England).
PUB DATE Dec 89
NOTE 91p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC04 Plus Postage.
DESCRIPTORS *Developed Nations; Educational Practices; Elementary Secondary Education; *Employment Qualifications; Foreign Countries; *International Cooperation; International Educational Exchange; International Relations; International Trade; *Job Skills; Job Training; *Occupational Mobility; Paraprofessional Personnel; Postsecondary Education; Professional Education; *Vocational Education
IDENTIFIERS *European Community

ABSTRACT

This report provides a summary of the education and training arrangements in the 12 member states of the European Community (EC) from school programs to technician and professional training. The introduction traces the history of initiatives and legislation in the EC and its related organizations with respect to qualifications, training, and employability. The next section presents a brief note on each member state and a broad outline of the education and training systems. The following section highlights the most significant features of craft worker training. Special attention is paid to "alternance" training (alternating on- and off-the-job training). The next chapter deals with vocational qualifications at the technician and paraprofessional level and at the professional and managerial level. In those countries in which the vocational qualification is closely related to the kind of educational institution involved, the institutions are described. The report concludes with a discussion of problems related to the mobility of workers across borders and the opening up of the market in Europe. Current initiatives and priorities are addressed. (Appendixes include a brief account of main legal documents that form the legal basis for action at the EC level in the field of vocational training; educational statistics; 76 print references; and 33 institutional resources.) (YLB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 328722

NCVQ R&D Report No 2
Towards 1992

Vocational Qualifications in the Member States of the European Community and moves towards an open market.

Report by Dr Ron Johnson
December 1989

The NCVQ R&D Reports are published primarily to inform those who are involved in developing National Vocational Qualifications and the NVQ Framework. Some reports may relate to particular aspects of the NVQ system such as credit accumulation, the NVQ database or the implications of NVQs for education and training.
The reports are published in the name of the individual authors, normally people working with, but outside NCVQ. Although the reports are likely to be supportive of NCVQ objectives, statements within them should not be interpreted or quoted as the policy of the National Council. The texts are the responsibility of the author.

CE 056893

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

C McGregor

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

TOWARDS 1992

FOREWORD

This timely report by Ron Johnson is the result of a project funded by NCVQ. It provides a summary of the education and training arrangements in all twelve members states of the European Community from school to technician and professional training.

The debate now growing as to how the UK education and training arrangements relate to those on the continent often assumes that there is some uniformity in what goes on across the channel and that we are out of line. This report clearly shows that we are dealing with twelve forms of provision and considerable variety in what takes place within each member state, including the UK.

The UK is moving towards one national framework, the NVQ framework along with parallel arrangements in Scotland. The government's intention is that all national qualifications which relate to the employability of an individual, including professional qualifications, should be classified within the NVQ framework. This will greatly strengthen our position in making comparisons with European systems. Britons travelling abroad will be armed with qualifications, showing the competences held by the holder, which will be readily understood by Europeans. The NVQ computerised database will provide the comprehensive source of all qualifications and their constituent competences. One can forsee the development in the 1990s of a European database which extends the NVQ model. The competence-based form of qualification provides the best expression of what holders of the qualification can actually do.

Ron Johnson's report also traces the history of initiatives and legislation in the EC, and its related organisations, with respect to qualifications, training and employablity in the opening section. It concludes with some of the current developments in this fast moving field.

I recommend the report to anyone who is struggling to make sense of the complexities of our qualification system and how it will relate to Europe.

Gilbert Jessup
Director of Research, Development and Information
December 1989

VOCATIONAL QUALIFICATION SYSTEMS IN THE EUROPEAN COMMUNITY

PREFACE

Any attempt to describe the vocational qualifications systems of the Member States of the European Communities must, perforce, be highly selective. Broad generalisations will inevitably hide a wealth of variety which proves the generalisation untrue in some respect or another.

Nevertheless, I trust that through perusing this report the reader will be able to gain some understanding of the basic systems of education and vocational training in the Member States so that when looking at a particular piece of this complex jig-saw puzzle, the context will be clearer.

Alphabetical listings are according to the initial letters of the Member States of the Community in their native languages.

I am indebted to a very large number of people in the various Member States who have provided me with information about different aspects of their education and vocational training systems. I am also indebted to officials at the Commission of the European Communities in Brussels and The European Centre for the Development of Vocational Training in Berlin for many helpful discussions. It has been impossible to do justice to all the material, but often it has been necessary to read more deeply so as to understand enough to make generalisations.

I have made every effort to present an up-to-date picture of the situation, but inevitably I will have failed. The situation is changing too fast to be documented, and those who need current information must seek it at source. For those who wish to delve more deeply into the subject I have listed a number of key documents and also key institutions in appendices.

I would like to express my sincere thanks to all those who have helped me with information and for the help and encouragement I have received from Gilbert Jessup and others at the National Council for Vocational Qualifications.

Dr Ron Johnson

Guildford
June 1989

VOCATIONAL QUALIFICATION SYSTEMS IN THE EUROPEAN COMMUNITY

CONTENTS

INTRODUCTION	page
Vocational Qualifications	4
European Perspectives	4

MEMBER STATES AND EDUCATION

Introduction	8
Belgium	8
Denmark	9
Federal Republic of Germany	10
Greece	12
Spain	13
France	14
Ireland	16
Italy	17
Luxembourg	18
Netherlands	19
Portugal	20
United Kingdom	21

SKILLED WORKERS AND MASTERCRAFTSMEN

Introduction	24
Belgium	25
Denmark	27
Federal Republic of Germany	27
Greece	30
Spain	31
France	34
Ireland	35
Italy	38
Luxembourg	39
Netherlands	40
Portugal	42
United Kingdom	43

TECHNICIAN AND PROFESSIONAL LEVELS

Introduction	45
Belgium	45
Denmark	47
Federal Republic of Germany	48
Greece	50
Spain	50
France	51
Ireland	52
Italy	53
Luxembourg	55
Netherlands	56
Portugal	57
United Kingdom	58

CURRENT DEVELOPMENTS

Priorities and Concerns	60
Current Initiatives	60
Current Priorities	62

APPENDICES

1. Community Law	63
2. Educational Statistics	66
3. Documents	70
4. Institutions	77

INTRODUCTION

Vocational Qualifications

Europe has a long and chequered history in relation to vocational training and qualifications. It is interesting to reflect on the fact that formal, universal education is not much more than a century old in Europe, whereas the concept of the apprentice dates back many centuries.

At the other end of the spectrum, the idea of specialisation in professions such as medicine, architecture, law and the church, also has a long history, normally linked to formal education in a special college or at a university.

Although it is dangerous to generalise, it may be worthwhile to take a very broad historical view of the way the vocational training systems of the Member States have developed. It may make it easier to understand some of the quite profound differences in approach.

Northern Europe was much influenced by the industrial revolution, which in Great Britain led to a diminution of the traditional guilds, masters and apprenticeship systems, to be replaced by uneasy conflict between employers and organised labour negotiating for the training of craftsmen, with the 'mastership' concept withering on the vine. There also developed a rift between the industrial entrepreneur and the "academic" - a divide which has only been bridged effectively within the last decade or so on any scale.

In France, their revolution led to the abolition of the guilds such that it is only in the last ten or twenty years that the apprenticeship system has really become established. The emphasis was on equality through an effective education system designed to equip every individual to be an effective citizen, and to select out the elite who would be educated to administer the industrial and political system.

In Germany, however, the idea of the mastercraftsman and the apprentice was retained, reformed and extended to almost every sector of working life. The apprenticeship is firmly established in Germany, with employers eager to accept apprentices and to train them up, releasing them every week for their education under the auspices of the education authorities.

The value of higher education and the need to ensure an adequate supply of well-educated and well-trained people is recognised by the governments, the employers and the trade unions in West Germany and in France.

Smaller countries such as Ireland, Denmark, the Netherlands, Luxembourg and Belgium have tended to learn from their neighbours, but develop systems that meet their own specialised needs in each case. In the southern European countries, Spain, Portugal, Italy and Greece, there is a curious love of learning and also of arts and crafts, and their systems seem to echo these priorities in their public institutions, perhaps at the expense of training for industry and commerce, but in recent years many efforts have been made to rectify this imbalance and technical and business training has developed to a higher level.

European Perspectives

From the outset of the European Economic Community vocational training and the recognition of vocational qualifications has been considered an important matter by the Commission of the European Communities.

Vocational qualifications are specifically referred to in a number of contexts in the various treaties which established the European Communities and the Commission which serves them. An expanded account of these treaties and the relevant EC legislation is provided in Appendix I to this report.

Pressure for work on vocational qualifications by the Commission of the European Communities arises directly from the Treaty of Rome itself (1957), and this was reinforced by the Single European Act which came into force in July 1987.

(NOTE: it is important to remember that there are three "Community" Treaties, i.e. relating to the European Coal and Steel Community, the European Economic Community, and European Atomic Energy Community, sometimes known as Euratom. That is why the central body is referred to as the Commission of the European Communities (CEC) in Brussels, commonly misquoted as the EEC, and to the European Community (EC) rather than the EEC)

Particular sections of the Treaty of Rome (the European Economic Community Treaty) are concerned with:

- the freedom to establish enterprises (EEC Articles 52-58) and to offer services (EEC Articles 59-66);
- the free movement of workers (EEC Article 48);
- the mutual recognition of diplomas etc (EEC Article 57);
- the general principles for implementing a common vocational training policy (EEC Article 128).

These Articles form the basis of proposals by the Commission to the Council of Ministers (consulting the European Parliament and sometimes other Committees as well en route), and lead to Regulations (rarely), Decisions, Directives, Opinions or Recommendations. Together these Articles and instruments form the basis of action by the Commission.

As an interim measure, the Council of Ministers decided in the 1960s and 1970s to pass a series of 'transitional' measures to facilitate professional and business activities. These are still current, and anyone who wishes to set up enterprises under these measures or gain some recognition for their competence in seeking employment can apply for a "Certificate of Professional Experience". In broad terms, an individual who has been trading or working in a responsible position for six years they can generally get this certificate, and this will enable them to set up in the same business in another Member state of the European Community.

Activities covered by these "transitional" directives include wholesale trade and intermediaries in commerce, industry and small craft industries (1964), self-employed persons in manufacturing and processing industries in certain groups (1964), self-employed persons in the retail trade (1968) and self-employed people in the personal services sector, e.g. restaurants, cafes, taverns, hotels, guest houses, camps (1968), wholesale coal trade (1970), trade in toxic products (1974) and various other activities (1975), itinerant activities (1975), insurance agents and brokers (1977).

Then there was a period when the Council agreed a number of directives covering specific professional and trade groups, e.g Doctors (1975), Lawyers (1977), Nurses (1977), Road Transport (1977), Dentists (1978), Veterinary Surgeons (1978), Midwives (1980), Services incidental to Transport (1978), Hairdressing (1982), Architects (1985), Pharmacists (1985), General Medical Practice (1986) and Waterway Transport (1987). Many of these have subsequently been amended. It often took many years to reach agreement, and a draft directive on Engineers has been under active discussion since 1969 without result.

This procedure is painfully slow, and since each Directive dealt with matters in some detail it was essential to maintain a watching brief on the situation as professions (and hence professional qualifications) do not remain static. Thus a number of Committees were set up which now have to be maintained and serviced - a costly and cumbersome activity for the Commission.

Thus in 1985 the Commission of the European Communities put forward a proposal for a Directive on a general system for the recognition of higher education diplomas followed by a modified proposal in 1986. In June 1988 the Council adopted a common position with a view to the adoption of a revised proposal - and this resulted in a "Council Directive of 21 December 1988 on a general system for the recognition of higher-education diplomas awarded on completion of professional education and training of at least three years' duration". This far-reaching Directive was accompanied by a Statement by the Council and the Commission agreeing that "professional bodies and higher-education establishments should be consulted or be involved in an appropriate way in the decision-making process". (It was also accompanied by a Council Recommendation concerning nationals of Member States who hold a diploma conferred in a third State.)

Most of this work was undertaken under the aegis of Directorate-General III (abbreviated to DG-III - Internal Market and Industrial Affairs), which deals with the matters arising from the Articles covering freedom of establishment and freedom to offer services. In passing it would appear that the policy adopted by DG-III throughout has been that Member States may not prevent someone from another Community country from working or trading on the basis of language alone: thus there can be no language tests as such - which could give rise to some interesting case law in some Member States following the implementation of the latest Directive.

As a result of a number of the rulings of the European Court over recent years, it would appear that almost all higher and further education courses can now virtually be classified as vocational.

Meanwhile, over the years Directorate-General V (DG-V - Employment and Social Affairs) has been considering ways and means of improving the situation for employed people, and a Council Decision in 1963 laid down "General Principles for Implementing a Common Vocational Training Policy", which among other things involved setting up an "Advisory Committee for Vocational Training". About eight or nine years ago DG-V also assumed responsibility for Education, which had formerly been linked with Research in DG-XII.

The Commission is obliged to consult this Committee on its activities in the field of vocational training. The Committee meets twice a year and has representatives from the relevant government departments, the employers and the trade unions from each of the Member States.

The 1963 'Ten Principles' enshrined concepts like enabling everyone to obtain training with freedom of choice of occupation, place of training and place of work, developing a coherent system, providing information and vocational guidance, and the progressive harmonisation of training.

In the late 1970s and early 1980s there was great concern about youth unemployment and youth training, and the Commission was advocating 'linked work and training' in various ways. There was also a concern in the early 1980s about the need for more training for new technology.

Over the years there have been attempts by the Commission to draw up comparisons between occupations in different countries and the training associated with these occupations to try to harmonise these. Early attempts (in the late 1960s) showed how difficult this idea was, and many of these studies never saw the light of day.

However, memories are short and in July 1985 there was a Council Decision on the comparability of vocational training qualifications between Member States of the European Community including a call for better information via features of job descriptions mutually agreed by the Member States.

Accordingly, the vocational training development centre known as CEDEFOP (see below), has been conducting a major study where job descriptions are being gathered and compared, country by country, sector by sector, and the relevant vocational qualification set alongside in each case.

Studies have been conducted on vocational training qualifications in various EC Member States for:

- skilled workers in the Construction sector;
- skilled workers and semi-skilled employees in the Hotel, Restaurant and Catering sector (sometimes called 'HORECA');
- skilled workers in the Electrical and Electronic sector;
- skilled workers in the Motor Vehicle Repair sector;
- skilled workers in the Agricultural sector;

and work is currently in progress in the Textile sector.

Introduction

In order to understand the vocational qualification system of a country it is important to consider some of the special features of the country, e.g. the way it is governed, the role of regions and different government departments, the degree of "federalism", the influence of native languages (where there is more than one), the way education and training is provided, the kinds of institutions involved, the influence of employers organisations, trade unions, trade bodies, professional bodies, and bodies which consider, classify and approve of qualifications ("homologation") or which award them. The influence of religious bodies may often be a special feature as well.

In this section there is a brief note on each Member State, and a broad outline of the education and training systems is provided as a background to help the reader to appreciate the vocational training and qualification systems.

In most European countries education is compulsory from the age of five, six or seven, and there are often Day nurseries, Kindergartens or other forms of Pre-school provisions for children under this age.

It is useful to apply the terms "primary education", the first few years of compulsory education (say up to age 10 to 12), "lower secondary education" (say from age 10/12 to 14/16) and "upper secondary education" (say from age 14/16 to 19 years), but since the education systems vary markedly from country to country and may not follow this precise pattern, care must be used in interpreting these terms.

Tertiary education is normally applied to courses beyond age 18 or 19, higher education to courses beyond university entrance level examinations (e.g. the Baccalaureat in France or the Arbitur in Germany). The terms continuing or further education are generally loosely applied to post school education at whatever level.

In such a brief account it is inevitable that generalisations will hide the complexity and richness of reality - for example the variety of secondary and tertiary level institutions in the Federal Republic of Germany, or the many alternative routes and pathways open to young people in France.

Many educational institutions are unique to that particular country and for clarity such institutions are called by the titles in the native language. The only alternative would be to use a term that describes an approximately equivalent institution in England, and this would create confusion, and be unhelpful to readers in other countries.

Throughout Europe the education and training systems are in the midst of change. The following account provides a useful introduction, but it cannot be relied upon to be up to date in every respect.

Belgium

The Kingdom of Belgium has a population of about 10 million people. The country is divided into three regions, Flanders, Wallonia and the capital city, Brussels, each of which now has rapidly developing political, economic and social powers. Foreigners make up a quarter of the population of Brussels.

Three languages are in use in Belgium. Dutch is spoken in Flanders, French is spoken in Wallonia, Brussels is bilingual (French and Flemish) and there are areas of Wallonia where German is the local language. The German-speaking population is about 0.5%, and of the remainder, over half speak Flemish.

The basic principles of education are laid down in the Constitution and in the general legislation adopted by the national Parliament. At the national level, responsibility for the administration, policy and planning rests with two ministries, the "Ministere de l'Education Nationale" for the French language education system (and also the German language education system), and the "Ministerie van Onderwijs" for the Flemish language education system.

The moves towards a federal system over the last twenty years or so means that more responsibilities in the field of education are being attributed to the "Councils" and the "Executives" of the three Communities (i.e. the regions of Flanders, Wallonia and Brussels).

Pre-school education is provided by the State, although the schools may be run by provincial and local authorities or by private bodies in receipt of State support. Education is compulsory from age 6 to 18 years, and full-time education is compulsory up to age 15. Education between 16-18 years of age can be full or part-time, and young people may receive this education in a school or in a vocational training centre.

Six years of primary education is provided in three two-year cycles leading to a certificate of basic studies for those who pass the requisite examinations. Admission to secondary education depends on the successful completion of primary education or the agreement of the "Admissions Council" - consisting of a group of teachers from the secondary school concerned.

There are two distinct types of secondary education in Belgium, the traditional "Type II" system (two three-year stages) which is being phased out and the "Type I" system (three two-year stages called "vernieuwd secundair onderwijs" or "ensignement renove").

Education has been heavily influenced by the Catholic Church which has its own schools. The system is in a state of change as traditional education (with three streams at the secondary level - general, technical and vocational education) is gradually giving way to the reformed system in which there is a diversity of opportunities including general, technical, artistic and vocational studies, each of which can lead to a certificate that opens the door to higher education, including most Universities.

Between the ages of 16-18, part time training may be complemented by work (a) in a firm, or (b) under a master craftsman with a normal part-time contract of employment, or (c) in an ONEM work experience scheme, or (d) as an apprentice with a firm or master craftsman. Alternatively, the young person may be unemployed and drawing benefit. ONEM is the Government's National Office for Employment.

Belgium has a special "Ministry for the Middle Classes" which is responsible for the craftsman, self employed and the small business sector. Those who are successful in the examinations and practical tests following an apprenticeship with a master craftsman are awarded a certificate approved by the "Ministre des Classe Moyennes". Training for those who set up and manage businesses is taken seriously in Belgium.

Denmark

The Kingdom of Denmark has a population of about 5 million people. Over 1 million people live in Copenhagen, a further million or so live in the other islands and about 2.3 millions live in Jutland.

Responsibility for education in Denmark is shared between the central State authorities, counties, municipalities and private institutions under the overall supervision of the Ministry of Education. This Ministry issues decrees, orders and circulars which are binding on educational institutions, and also issues guidelines, directives, and recommendations which are not binding, but must be carefully considered by the institutions concerned. The Ministry has general control of final examinations and sets out minimum standards for school buildings. Day nurseries (0 to 3 years of age), Kindergartens (3 to 7 years of age) and "integrated institutions" (up to 14 years of age) are provided under the auspices of the Ministry of Social Affairs and pre-school classes (5 to 7 years of age) are provided under the auspices of the Ministry of Education.

Since 1976 Denmark has had a two-tier system of compulsory education of nine years, from age seven to sixteen years of age (in a "Folkeskole", a comprehensive school combining what would be termed primary and lower secondary education in some countries) followed by a voluntary tenth year, or alternatively a transfer at age 15 to the Gymnasium (Grammar School) or upper secondary school. English language is compulsory from the 5th form onwards in the Folkeskole. At the end of the third year of the upper secondary school, the final examination (matriculation) qualifies the student for university entrance (subject to some restrictions).

From the eighth form onwards there are a number of practical subjects in the curriculum including typing, photography, drama, film, electronics, and information technology. The curriculum also includes road safety, sex education, Norwegian, Swedish, religious education, health education, and educational and vocational guidance in addition to traditional subjects like Danish, mathematics, physical education and sport, creative art, music, history, geography, biology, physics and chemistry.

Pupils can take the examinations in individual subjects and the Leaving Examination of the Folkeskole can be taken in 11 subjects (normally at the end of the ninth year, and the Advanced Leaving Certificate in 5 subjects after following advanced studies in their tenth year.

As an alternative to the Gymnasium, young people can take a variety of routes including training as teachers, librarians, social workers, health services workers (nurses etc.), technicians and seamen, mostly in specialised colleges. Other alternatives include taking Higher Preparatory Examination Courses or entering apprenticeships in both the crafts and in business occupations, or basic vocational training (known as "efg" - erhvervs fagliche grunduddanelse) covering a group of occupations.

Federal Republic of Germany

The Federal Republic of Germany ("West Germany") has a population of over 60 million people. The republic is divided into eleven states (singular Land, plural Laender) each of which has its own Minister of Education and Cultural Affairs, and education system. These Education Ministers confer regularly through an organisation known as the "Standing Conference of Education Ministers" which has offices in Bonn.

The Laender are Baden Wuerttemburg, Bayern, Bremen, Hamburg, Hessen, Niedersachsen, Nordrhein-Westfalen, Rheinland-Pfalz, Saarland, Schleswig-Holstein and West Berlin. Berlin (West) is in a special position because of the post-war quadripartite agreement.

Under the Basic Law (Grundgesetz) the Laender Governments have a general responsibility for educational matters, whereas the Federal Government has only limited powers, particularly in relationship to the general principles in the higher education sector, the advancement of scientific research, student aid, vocational training conducted outside the formal school system and vocational guidance. In several areas the law requires close collaboration between the Federal and Laender authorities.

Compulsory education is provided free, and there are few private schools. The restricted role of the Federal Ministry of Education does include responsibility for a number of matters of general principle with which the Laender must comply, e.g. in the supervision of schools, the right to establish private schools and the inclusion of religious instruction in the curriculum.

Although there are significant differences between the education systems of the individual Laender, there is a broadly similar pattern of education with voluntary preparatory education from three to six years and full-time compulsory education for nine to ten years, with most young people remaining in either full or part-time education until the age of 18 years. Primary education lasts from the 1st to 4th school year in compulsory education, secondary level from the 5th to the 10th year, and the upper secondary level from 11th to the 13th year.

Primary education is provided in the "Grundschule" common to all children. According to the Land concerned, this secondary education might be provided in a Comprehensive school ("Gesamptschule"), or in three types of schools, Grammar ("Gymnasium"), Secondary Modern ("Realschule") or Main Secondary ("Hauptschule"). The upper secondary education which leads to the university entrance examination (the "Arbitur", which also gives access to teacher training, technician or other higher level courses) can generally be taken only in the Grammar schools or the Comprehensive schools.

There are also vocationally oriented upper secondary schools ("Fachoberschule") or vocational schools ("Berufsfachschule") for full-time pupils and for those who continue part-time, generally in an apprenticeship, there are special vocational schools known as "Berufsschule". An alternative secondary school, the "Berufsfliches Gymnasium" has a vocational emphasis in preparing young people for higher education, whereas the Berufsfachschule aims to give the students a vocational qualification.

Schools known as Fachschule offer an initial vocational qualification, advanced vocational training and also general education. The successful completion of studies in a Fachschule entitles the individual to a vocational title such as "state examined engineer" or "state-examined business manager". There are special Fachschulen, e.g. for Home Economics.

The schools are generally Laender or municipal institutions, although there are some private schools which are also subject to supervision by the Laender authorities, i.e. the ministry of education and culture of the particular Land.

Co-operation between the Laender in the field of tertiary education is secured through the Standing Conference of Education Ministers (mentioned above) and also the West German Rectors' Conference ("Westdeutsche Rektorenknferenz") which is an organisation representing the institutions of higher education, (especially the "Fachhochschule") through their principals or rectors.

The importance of international cooperation in the field of education and training is fully recognised at governmental level in the Federal Republic of Germany and many of their key documents are translated in English and French to facilitate understanding and the exchange of ideas.

At the same time the Federal Government recognises that each country has an education and vocational training system adapted to its own economic, social and cultural traditions - which means that such systems cannot generally be transferred from one country to another without modification. The West Germans are rightly proud of their own vocational education and training system, and will strongly defend it against undue interference from outside (e.g. by the European Community Institutions), but at the same time they do not seek to impose it on others.

They are, nevertheless, keen to learn good ideas from other countries and to incorporate these, as appropriate, into their own system. Because of the bureaucratic way in which the system is organised it takes time to bring about reforms, but in spite of this significant changes have, in fact, taken place over the past ten to fifteen years which have modified the system to take account of the changes in the needs for education and training as a result of new technology and working practices, and the expectations of young people and older workers.

Greece

Greece has a population of about 10 million people. The country is divided into three regions, Thessalonica, Macedonia and Athens, the capital city, and 51 communes (local authorities). Almost a third of the population lives in Athens, more than the total rural population of the country. One-fifth of the surface area of Greece consists of Islands, and it has had a considerable dependence on the sea throughout its history.

The education and training systems of Greece are undergoing a dramatic transformation and restructuring, but the following account provides a useful starting point for those who wish to understand the overall position. The system is basically centralised, governed by national laws and by decrees and ministerial decisions which cover the organisation of educational institutions, the content of teaching, the school timetables and the organisation of national examinations. These laws and decisions cover education provided in the private sector (which is not very large) as well as that in the public sector.

The central body responsible for education in Greece is the "National Ministry of Education and the Regions". This Ministry is advised on curriculum matters by the "Centre for Educational Studies and In-service Training" (KEME).

Institutions of further and higher education are self-governed public bodies subject to public law and supervised and financed by the Ministry.

Pre-school education consists primarily of two years of Nursery education, and consists mainly of activities which prepare pupils for the school and social environment, and there is no formal teaching in reading and writing.

Towards the end of the 1970s, education became compulsory for nine years (from 6 to 14 years of age) and this comprises primary education (Domotico) for six years and a further three years of secondary education (Gymnasio). Schools can be private or state run, and all pupils follow the same curriculum.

In the lower secondary schools the curriculum includes ancient Greek, modern Greek, mathematics and a foreign language (usually English or French). Every three months pupils are examined orally and in written tests. Progression from class to class and the final leaving certificate is dependent on the results of these assessments, with the final decisions resting with the teachers in a school acting as a single body.

Those who attain the leaving certificate of their Gymnasium are admitted without any further examination to any of the four types of "lykeon". There are also private schools at this level.

Provision is made and encouragement given for education beyond the compulsory period in the General Lykeions, Technical-Vocational Lykeions, Integrated Comprehensive Lykeions (after 1984) or at the Technical-Vocational Schools. It is estimated that over a quarter of the young people who leave the Gymnasium continue their education for at least three more years.

There is considerable variety in courses provided in the upper secondary sector of education, including technical and vocational options, and also scope for lateral mobility between different courses of study and institutions.

The General Lykeions offer general education, and accept young people up to the age of 18: many older young people apply because they did not complete their education earlier.

After successfully completing courses at this level there are opportunities to enter the universities, the Technical Educational Institutions or other tertiary level educational institutions.

Spain

Spain has a population of about 38 million people distributed unevenly among its seventeen Autonomous Communities. Of the seventeen Communities, nine have been formed by the amalgamation of neighbouring or adjacent provinces with common historical, cultural or economic characteristics (Andalucia, Aragon, Castilla-La Mancha, Castilla Leon, Cataluna, Comunidad Valenciana, Extremadura, Galicia and Pais Vasco), two are island territories (Baleares and Canarias), five are individual provinces with their own historical development (Asturias, Cantabria, La Rioja, Murcia and Navarra), and one, Comindad Autonomia de Madrid, was formed by special permission of the Parliament.

About 45% of the population live in three Communities - Andalucia, Cataluna and Madrid. But whereas Andalucia covers a large area with the population spread comparatively thinly apart from a few cities, notably Seville, in the Community of Madrid many people are concentrated in the capital city which is densely populated.

The 1978 Constitution which determines the distribution of responsibilities between the State and these Autonomous Communities lists thirty-two areas over which the State has exclusive authority, and twenty-two areas where the Autonomous Communities can assume responsibility. Education is a shared responsibility, and is not explicitly contained in either list.

In practice, broadly speaking the State is responsible for (1) regulating academic and professional titles, (2) guidelines to ensure basic rights to education, (3) general regulation of the education system, e.g. in such matters as the length of compulsory schooling, educational levels and progression, special subjects, teaching methods, basic characteristics of the School Record Book, (4) minimum educational standards, in particular the core curriculum, (5) minimum standards for educational establishments, e.g. qualifications of the teaching staff, pupil/teacher ratios, facilities for tuition and sports, (6) teaching of the Castilian Language, often alongside the specific language of the Community, (7) the overall planning of educational provision, (8) international cooperation in the field of education.

The functions of the State are exercised by the "Ministerio de Educacion y Ciencia", the Ministry of Education and Science. Its responsibilities include pre-school education, primary education, secondary education, university education and the development and coordination of research. It is advised by a Schools Council, a National Council of Universities and a Coordinating Board for Vocational Training.

Each Autonomous Community has its own Executive Council and Education Department, and the general system of "transfer of functions and resources" is intended to enable these bodies to fulfil their educational responsibilities. These are concerned with the day to day management of the education system, including the educational institutions, teaching staff, and technical inspection services.

Pre-school education is optional for children up to the age of five and consists of two phases, "Jardin de Infancia" (Kindergarten) for 2-3 year-olds, and "Escuela de Parvulos" (Nursery school) for 4-5 year-olds. Public institutions provide this education free, and it is intended to help the harmonious development of the child's personality and not to impart particular scholastic skills.

Compulsory education lasts for eight years, normally from age 6 to 14 years. It is known as "Educacion General Basica" (EGB) or basic primary education, and reforms are in progress to increase this to age 16 years. The first two years are known as the lower cycle, and the next three years comprise the intermediate cycle. For these two cycles the class is taught by one teacher who takes a "global" view of education.

In the last three years the curriculum is divided up and taught by teachers who specialise in particular subject areas. Here the emphasis is on acquiring knowledge and understanding in an organised and systematic fashion. Curricula and guidelines are defined by the Ministry of Education and Science, but with sufficient flexibility for teachers to take into account local conditions.

Secondary Education ("Ensananzas Medias") in Spain (what would be termed upper secondary level in many European countries) is provided in two alternative forms, an academic and a vocational stream.

The academic stream consists of a three-year integrated secondary education known as "Bachillerato Unificado Polyvalente" (BUP), normally followed by a one-year university orientation course, "Corso de Orientacion Universitaria" (COU) giving access to the university courses. The COU is provided at the "Institutos de Bachillerato" and at approved private schools.

The vocational stream known as "Formacion Profesional" (FP), provides vocational training at two levels, FP I, leading to the qualification and use of the title 'Assistant Technician' and level FP II, leading to a qualification and use of the title 'Specialised Technician'

The "Ensenanzas Medias" is undergoing reform to accommodate the raising of the school leaving age to sixteen, and these changes are expected to be widely implemented during 1989 as the culmination of a series of trials in selected areas which has been progressively widened out to include more schools.

The aim is to create a first cycle of secondary education for pupils aged 12 to 15 years, initially in the current BUP and FP institutions, and to follow this up with upper secondary education with five options: social and human sciences, natural sciences, linguistics, technical-administrative training and technical-industrial training. The COU will be phased out.

The aims of these reforms include the merging of academic and vocational streams to form a common course of general education including technical and practical elements, the establishment of remedial teaching to reduce the failure rates, the introduction of common standards of quality and level irrespective of the cultural, geographical and socio-economic diversity (to offset rather than to enhance inequalities), the introduction of flexibility such that course can be adapted to changes in social and technical requirements without causing major upheavals, and the improvement of links between the education system and society at large.

France

France has a population of about 56 million people.

Education in France is based on a number of general principles, notable the secularity of education, compulsory education up to the age of sixteen years, and free education provided in public institutions throughout the compulsory period. Although there are both public and private educational institutions these are all governed by national legislation and by decrees and regulations issued by the Ministry of Education being responsible for implementing the Government's decisions.

Since the Ministry of Education plays such an important role in vocational training in France it is worth noting some of its key features. The Central Administration of the Ministry has directly attached to the Minister's Cabinet, i.e. the Cabinet Office, General Inspectorate, Financial Control, Information and Public Relations Office, and "Delegations" with specific areas of responsibility, including the "Delegation de la Formation Professionelle", responsible for vocational training within the education system.

The Central Administration also has pedagogical directorates and common directorates and offices covering such matters as personnel, finance, data processing and statistics, buildings and equipment. The General Inspectorate carries out inspections, and is also responsible for providing the Minister with information and advice to assist in the 'animation' of the system.

At regional level the Minister is represented by 27 "Rectors", each of whom is the head of an administrative unit or district known as "Academie" covering about 4 or 5 "departments". In recent years there has been a concious effort to devolve more authority to the regions, which now have their own administration, finance and inspectorates.

There is a long tradition of pre-school provision in France, with a high proportion of children attending pre-school institutions, with virtually 100% attendance of 5 year-olds. Attendance is optional and in the public institutions, free. About 85% of the provision is in public as opposed to private institutions. Most of this pre-school education is given in nursery schools ('ecoles maternelles").

Compulsory education lasts for ten years, from the age 6 to 16 years. This begins with five years primary education in schools ("ecoles primaires") set up and maintained by the communes. Pupils must then attend some form of secondary education for at least five years.

The first four years of secondary education is provided in "colleges", with two years of an 'observation' cycle followed by two years in an 'orientation' cycle. At the age of fourteen pupils may take the examinations for the "Certificat d'etudes primaires et elementaires" (CEPE, Primary and elementary studies certificate). The "Brevet des colleges" (College Diploma) is awarded at the end of the third grade (fourth year) provided progress is satisfactory as indicated by continuous assessment of classwork (in State Schools) or by examination (for students in private schools).

Young people may transfer at 15 to a "Lycee" for further year of general education or to a "Lycee d'Ensignement Professionel", where the education and vocational training is provided. Alternatively, pupils can take pre-vocational courses and start at the LEPs at age 14.

Continued study in the "Lycee" can lead, after three years in all, to a general "baccalaureat de l'ensignement du second degre", i.e. a secondary education baccalaureat, a "baccalaureat de technicien" (BTn - a technical baccalaureat) or to "brevet de technicien" (BT - a technical diploma).

A baccalaureat qualification is required for entry to the universities, the "Ecoles" or "Instituts superieurs" in universities or the "Grandes Ecoles".

These qualifications are described in more detail in later sections.

The BTn is awarded after written, oral and practical examinations, and covers both general and technical subjects.

The BT is also awarded after written, oral and practical tests and is regarded as a final qualification in its own right. Holders can, if they wish, continue their education in the "technicien superieurs" section of the "Lycees" or, in certain cases, in the "instituts universitaires de technologie" (IUT - University Institutes of Technology) to prepare for the "diplome universitaire de technologie" (DUT - University Technical Diploma).

Young people who enter the LEP at 14 generally take the three-year course leading to the certificat d'aptitude professionelle (CAP - vocational training certificate) which represents skill and knowledge in a particular trade. Young people who enter the LEP having completed four years at the college can study for the "brevet d'etudes professionelles" (BEP - vocational studies diploma) or for the CAP. The BEP is broader in character than the CAP, and covers the basic knowledge and skills needed in a group of related occupations, e.g. in the industrial, commercial, administrative or social sector.

Those students who do well in the CAP or BEP examinations may take further studies to obtain the BT, or BTn. Recently new qualifications have been devised for vocational and technically oriented young people, i.e. vocational and technological baccalaureats.

Ireland

The population of the Republic of Ireland is about three and a half million, and nearly two-thirds of the people live on the eastern and south western part of the country, including the capital, Dublin. Elsewhere the population density is low.

Education is the responsibility of the Minister of Education who is a member of the Irish Government and responsible to Parliament. The Minister's Department has sections that deal specifically with primary education, secondary education and with university and other higher education, special education and so forth. Philosophically the State recognises the primary role of the family in the education of each child and parents may choose whether to educate their children at home, in private schools, or in schools recognized or established by the State.

The Department of Education exercises control by prescribing a common programme of instruction for schools, prescribing the qualifications for teachers, assessing teacher performance through an inspectorate system, prescribing general rules for the operation of schools and planning school accommodation.

The State is responsible for the provision of free primary education, and for supplementing and aiding private and corporate initiatives if this is considered to be in the public interest. Most of the initiatives in the field of primary education were originally taken by the Catholic church and other religious denominations with the schools largely catering for the children of that denomination.

Thus primary schools are locally organised and controlled, with a "patron" who may be a person or a body applying for grant aid to establish and maintain the school. This patron is often the Bishop and there is a Board of Management (representing the patron, the parents and the teachers) responsible for the day to day management of the school, including the appointment of teachers, subject to the approval of the Minister of Education.

There are four kinds of post primary schools, called respectively secondary schools, vocational schools, comprehensive schools and community schools. Although they are privately managed, secondary schools receive considerable funds from the State through the Department of Education, and comprehensive and community schools are fully funded by the State.

Secondary schools are privately owned and managed, and must be recognized by the Department of Education and are subject to its regulation. They are mostly run by religious communities, but some are managed by Boards of Governors or by individuals.

The vocational schools are administered by vocational education committees on which sit representatives of the local authority alongside representatives of the local trades and industry together with educational experts.

Comprehensive schools have Boards of Management with representatives of the religious authorities, the local vocational education committee and the Minister of education. Community schools have Boards of Management representative of a wide range of local interests - the local vocational education committee, the religious communities, the parents

and the teachers.

There is no national system of pre-school provision for children, but children may be admitted to the primary school at age four although the compulsory age for starting at school is six. There have been a number of voluntary initiatives including play groups and there is some State support for these, especially where deprived children are concerned.

Education is compulsory for children between the ages of six and fifteen years (nine years of education) and the majority of young people attend primary school until they are twelve years of age. Note that the average age of starting primary school being five, as over 70% of four-year olds and almost 100% of five-year olds attend school.

Thus there are eight years of primary education with the assessment of the children being carried out by teachers on the basis of standardized tests or tests which the teachers themselves devise.

The last three years of compulsory education, from age 12 to 15 years, constitutes the junior cycle of secondary education, and this is almost entirely carried out in the secondary, vocational, comprehensive or community schools mentioned above. Education is provided free in the latter three types of schools, and also in secondary schools participating in the grant scheme, but in other schools fees are paid.

Although there are some differences of emphasis in these schools at the secondary level, e.g the secondary schools emphasizing academic subjects whilst in the vocational schools the emphasis is on manual skills, all schools provide a sound general education, and the opportunity to study academic and technical subjects. Certificate courses laid down by the Ministry of Education are followed in all the schools.

There is a "Day Vocational Certificate" or "Group Certificate" (two year course), an "Intermediate Certificate" (three-year junior post primary course). The Group Certificate offers a wider range of practical subjects, but pupils may elect to study for a further year for the Intermediate Certificate. The examinations are organised by the Ministry of Education and marked by teachers under the supervision of assisting advisory examiners.

At the end of compulsory schooling, pupils may continue their education for a further two years to take the examinations for the "Leaving Certificate", find a job or enter an apprenticeship. Those who have not found such an opportunity may enter a special vocational preparation and training programme organised in the secondary, vocational, comprehensive or community schools.

Italy

Italy has a population of about 58 million people, organised into twenty distinct regions.

There is no strong tradition of vocational training or apprenticeship, and vocational skills were, in the past mainly acquired on the job. The emphasis in education was on a classical education.

Many schools in Italy are State-owned, but there are also public schools run by cities and communes ("Non-State" schools) and private schools. All of these schools are strongly controlled by the Ministry of Public Instruction.

Non-State and private schools may be granted State recognition by following the prescribed programmes and providing educational safeguards to the Ministry of Public Instruction.

There is a National Council for Public Instruction, an advisory body with the Minister of Public Instruction as its President which deals with primary and secondary education, and a similar Council for University level matters.

The Ministry exercises its powers through ministerial delegations and branches at regional and provincial level. There is a regional superintendent, appointed by the Minister, in each of the twenty regions. These superintendents organise the recruitment of teachers at the secondary level and ensure coordination between the central administration and policies and activities at the regional level.

Attendance at Nursery schools is voluntary from age 3 to 5 years.

Education is compulsory from age 6 to age 14, with 5 years in the primary level schools (age 6 to 11 years) and 3 years in the secondary I level schools known as "scuola media" (intermediate schools). The "scuola media" are fully comprehensive schools which provide a free, general education aimed at training all children for adulthood and citizenship and preparing them to undertake further studies.

Class teachers - as a group - compile and regularly update a personal record (known as the "scheda personale") on each child. This record is presented in the form of a written description of attitudes, tendencies, behaviour and level of achievement. These records are analysed and summarized from time to time, and the teachers explain the results and discuss them with the parents, who receive a copy of the personal record.

The evaluation of the pupils performance together with the final assessment are incorporated into a final document which authenticates the completion of compulsory education.

At the end of the third year pupils are required to take the intermediate school leaving certificate examination administered by teachers with an outside chairman. Advice and suggestions regarding further education are appended to the certificate for those who are successful.

Luxembourg

Luxembourg has a population of about 400,000 people and the three languages in common use (Luxembourgish, German and French) are all spoken and written within the education system. The country is divided into "communes" which play an important part in the education system, especially at the primary level.

Although there are three languages, the education and vocational training system is organised by a single Ministry of National Education (in contrast to the situation in Belgium).

There is a Higher Education Committee consisting of up to 42 members representing other ministries, (e.g. sports, health, family affairs) the clergy, teachers, parents and industry. This Committee advises the Education Minister on the planning and management of the education system at all levels.

On the vocational training side the Education Ministry collaborates closely with other responsible ministries and with professional and trade bodies.

Luxembourg does not have a university institution which offers full degree level courses and those who wish to study at this level visit another country. For those who wish to follow a profession in Luxembourg there is a system whereby their degree can be assessed in relation to Luxembourg standards.

General education at the primary and secondary level is managed by a partnership between the State, the communes (local authorities) and private bodies like the church. Private schools are subject to state inspections and pupils must sit the public examinations to obtain recognised certificates.

Pre-school education, which is compulsory for five year old children and optional for four year olds, contains no formal tuition and is concerned with fostering the physical, intellectual and social development of the children.

Education is compulsory up to the age of 15 and pupils can begin their vocational studies at secondary school. Children are encouraged to stay at school longer, however, and provision is made for secondary schooling up to the age of 18 or 19 years of age.

Primary education, which lasts six years, is followed by a minimum of three years at secondary school - normally up to age 15. There are general and technical secondary schools, and children must sit an entrance examination comprising French language tests, German language tests and arithmetic.

General education at the secondary level is provided in 'lycees'. These provide seven years of tuition and those who successfully complete this course of study can gain entry to the University Centre.

Private schools are well represented at the secondary level and in the special education sector. These private schools are subject to the same inspection as the public sector schools, and the children sit the same public examinations to gain official certificates.

Technical secondary education is provided in the "lycees techniques", some of which are specialised, e.g in the arts and crafts, or agriculture. There are three stages to these studies, an initial "observation and orientation stage" of three years, an intermediate stage of three years offering a full-time vocational course, or a part-time course which complements on-the-job training in an apprenticeship.

As an alternative to the traditional secondary education a new form of comprehensive education is being developed known as "tronc commun", covering the 7th, 8th and 9th year.

There is a higher stage of a further two years providing in-depth vocational training which prepares young people for higher technical studies.

Netherlands

The Netherlands has a population of about 14 million people. The education system of the Netherlands reflects a key feature of the culture and the social character of the country - a freedom for people to develop their own lifestyles in their own way. Thus, within the education system there is a high degree of autonomy for both educational authorities and teaching institutions - with many private schools.

The majority of schools and vocational training establishments are either Roman Catholic, Christian Protestant or private and independent. This means that the content of the programmes - especially the social and cultural aspects, will depend on the particular institutions concerned. Apprentices are linked into this system through the academic content of their training programmes.

Nursery education is from three to six years of age, when compulsory education begins. Compulsory education lasts for ten years, up to age 16. Compulsory education is divided into the primary level (aged six to 11 years), secondary level (12 to 16 years) and the upper secondary level (16-17 years of age). A variety of vocational training opportunities are open to young people at age 16. Sixteen year-olds who do not wish to continue in full-time education are nevertheless obliged to attend part-time for two days a week for one year.

Most secondary education is provided in three different forms, i.e. pre-university education ("v.w.o."), general secondary education ("a.v.o.") or vocational education ("b.o.").

Pre-university education is provided in "gymnasiums", "Atheniums" and "lyceums", each of which accept children from primary school and provide six-year courses. Latin and Greek courses are provided in the "gymnasiums", but not, generally, in the "atheniums". A "lyceum" is a combination of these two schools with a common first year for all pupils.

General secondary education may consist of a four-year course of junior general secondary education ("m.a.v.o."), where the leaving certificate gives access to senior secondary vocational schools ("m.b.o.") and to the fourth year of the senior secondary schools ("h.a.v.o."). The "h.a.v.o." courses last five years and the certificates give access to higher vocational studies.

Those sixteen year-olds who opt for part-time education can choose between a vocational training course under an apprenticeship, a course at an institute for early school-leavers, or one of the officially approved courses.

Portugal

Portugal, which includes two island groups in the Atlantic (the Azores and Madeira) in addition to the mainland, has a population of about 10 million people.

Apart from a few institutions which are attached to other ministries, education in Portugal is the responsibility of the Ministry of Education.

Central government ensures that the relevant laws are implemented through its activities in the design, planning, coordination and inspection of the education system. Local and regional authorities deal with the day to day management of the system, and their responsibilities and authority is gradually being increased as the administration of education is being decentralised.

The National Education Council ("CNE") consists of senior civil servants from the Ministry of Education, representatives of the unions and of the employers, and also representatives of some other ministries. Its aim is to improve the links between education and the various sectors of society and to advise the Minister on policy.

Pre-school education is optional and is provided in "Jardins de Infancia" or nursery schools in a wide variety of organisations sponsored by the Ministry of Education, the Ministry of Labour, State supported autonomous bodies, charitable institutions, private and cooperative schools, and by trade unions and other organisations. Children may attend from the age of 3 years until they enter the primary school.

Compulsory education, provided free, commences at age 6 years and lasts for nine years, i.e. primary education (4 years), preparatory education (2 years) and unified secondary education (3 years), up to age 15 years.

In the case of preparatory education, in addition to the normal provision in preparatory schools, education is provided by Television in areas without such schools. Lessons are received on a private or official TV set and then the subject is developed by an instructor (normally a primary school teacher). In the normal preparatory schools the teachers have had a university education.

Secondary education, which lasts for six years, is comprised of a three-year General Unified Course (compulsory) followed by further three-year Complementary Courses and Technical Vocational Courses.

Primary and Secondary level education is also provided on a part-time basis for young people and adults who failed to receive this earlier.

At the end of the compulsory period young people may thus continue full-time education in the Complementary Courses, either taking the academic option (three years) leading to higher education, or the technical-vocational option (three years) aimed at intermediate level vocational training, but which also gives access to higher education. As an alternative to these Complementary courses the young person may take a vocational course lasting one year, supplemented by six months work experience and practice.

United Kingdom

The United Kingdom of Great Britain and Northern Ireland consists of four separate countries - England, Northern Ireland, Scotland and the Principality of Wales, with a total population of about 56 million people.

Although there are regions designated, the significance of these should not be over-emphasized in relation to vocational training, as different government departments and local authorities do not always follow the same boundaries.

In all four countries education has traditionally been largely decentralised, but under recent legislation Central Government has been seeking to impose particular emphases, curricula and standards on the systems.

There are, in fact, three different education systems in the United Kingdom, for England and Wales, for Northern Ireland, and for Scotland. The system for Northern Ireland is substantially similar to that in England and Wales, but the Scottish system is quite separate and distinct.

The Department of Education and science has nominal responsibility for all aspects of education in England, and for the Government's relationships with and support for universities. The Department of Employment (through the Training Agency) also exercises considerable influence on educational provision, e.g. through the 'Technical and Vocational Education Initiative'(TVEI) and through its funding of vocational education and its partial funding of further education courses.

The Department of Education for Northern Ireland is responsible for non-university education in Northern Ireland: the Province has its own Minister in the Government. Scotland has its own Minister in the Government and the Scottish Education Department is responsible for non-university education in Scotland. Wales has its own Minister in the Government and the Welsh Office is responsible for non-university education in Wales. The Education Departments for Scotland and Northern Ireland and the Office for Wales are consulted about university matters within their domain, but they do not have formal authority for universities.

Broadly speaking the central authorities determine national aims and formulate national policy, commission research and support the development of curricula and examinations and set minimum standards for educational provision.

In England, Wales and Northern Ireland most schools and colleges are provided by local education authorities ("LEAs") who employ teachers and other staff, provide and maintain buildings, equipment and materials and provide grants to students in higher and further education. There are moves currently in progress to transfer the day to day management of a number of schools and institutions to self-governing boards.

Local education authorities are part of the local authority system. There are 105 local authorities in England and Wales, 12 in Scotland and 5 in Northern Ireland. These local authorities (cities, counties, county boroughs) are legally required to appoint an "Education Committee" with at least 50% of its members being elected representatives from the relevant council and the remainder being specialists in the field of education.

In Scotland local authorities provide most of the schools (known as public schools, whereas in England the term "public school" means a private school) and some colleges in the same way as in England and Wales, but the institutions of further education are "Central Institutions" administered by independent governing bodies, financed through the Scottish Education Department, apart from three supported by the Department of Agriculture and Fisheries for Scotland.

Thus, within the United Kingdom most primary schools and a large proportion of the secondary schools are provided or supported, by one means or another, by public funds. Some are set up and run by local authorities, some receive grants from public funds subject to inspection, and some are privately funded. In spite of this complexity, there is only one parliament for England, Northern Ireland, Scotland and Wales, and one central Government.

Pre-school education within the UK caters for children aged from 2 to 5 years, although there are few children who attend before the age of 3 years. Pre-school provision varies from place to place: it may be provided by the local authority in a separate nursery school or in special classes in a primary school, or by voluntary bodies. Informal play groups are also organised by parents and voluntary bodies for children under the compulsory school age.

Schooling is compulsory for children soon after they reach the age of five years, and continues until age 16. Two stages of school education are officially recognised, primary and secondary. These relate to the ages of 5 to 11 years (primary) and 12 to 19 (secondary), although in practice educational provisions does not conform precisely to this pattern.

The nature of the provision depends on the country concerned (Scotland being markedly different to the rest of the UK) and even to which local authority is concerned. Broadly speaking children begin their schooling in Primary education at age 5 (some begin at age 4), in some cases starting in "infant schools" up to 7 years of age, followed by "junior schools" and then at age 11 (12 in Scotland) moving to secondary schools to complete their compulsory education. In many parts of the country children attend "middle schools" from age 8 to 12 years.

For most children in England Wales and Northern Ireland, secondary education is provided in a "Comprehensive School", but some attend a "Grammar School" (traditionally preparing selected young people for university entrance at age 18 or 19 years) or a "Secondary Modern" school which provides a general education up to the age of 16 years, and for increasing numbers of young people, beyond that age. A few LEAs run what are known as "Technical Schools" which provide a general academic education with an emphasis on technical subjects. The Government is hoping to establish a series of new secondary schools which focus more sharply on the needs of the economy.

In England and Wales the examination system for the sixteen year-olds in secondary schools is now being reformed with the introduction of a new examination designed to cater flexibly for children of all abilities. This examination is called the General Certificate of Secondary Education (GCSE).

Those who wish to go on to higher education need to study for the Advanced Level of the General certificate of Education in three or four subjects, where the examinations are normally taken at age 18 or 19 years. These examinations are set by independent "Examining Bodies".

The secondary school system is currently being changed in three distinct ways. As mentioned above, there is a new examination system leading to the "GCSE" designed to enable the majority of school leavers to achieve a certificate which reflects their achievements in a basic range of subjects, and replaces earlier systems which, in effect, catered for only 60% of school-leavers, the academically able.

The second initiative is concerned with providing school leavers with a document, a 'profile', which demonstrates a range of achievements including non-academic and indeed, non-school, subjects. This profiling system is in the course of development, but it is likely to consist of 'formative' profiles which will mention areas for improvement and be used as an aid to developing the pupil's abilities, and a "summative" profile, which is retained when the youngster leaves school, and contains only positive achievements.

The third change is a new style of curriculum emphasizing technological and vocational studies, i.e. the "Technical and Vocational Education Initiative". These developments support the general thrust towards making the system more responsive to the needs of individual young people, to recognising achievements and ability over a range of topics, recording achievement over the period of study and not just in terminal examinations and tests, and ensuring that the curriculum is relevant to the modern world.

In Scotland most young people attend secondary schools with a comprehensive intake, and most of these schools provide the compulsory education and a further two years of optional education. The young people take examinations known as the "Ordinary Grade" at age 16 years and study for a further year to take the "Higher Grade" examinations. Success in the Scottish Higher Grade gives access to the Universities in Scotland.

On completing their compulsory education young people in the UK may leave school to seek work, stay on at school to study for entry to higher or further education, to extend their education or to take "pre-vocational" courses, enter a further education establishment full-time to continue their general or vocational education, or participate in the two-year "Youth Training Scheme" (YTS) organised by the Department of Employment's Training Agency.

School education for post 16 year-olds may be provided in the "Sixth Form" of secondary schools, or in special "Sixth Form Colleges", or in "Tertiary Colleges". Tertiary Colleges generally offer a wide range of general, vocational and technical courses. The Youth Training Scheme provides for on and off-the-job training over a two year period, and where possible this is designed to give the young person a vocational qualification. Unfortunately, current developments in the United Kingdom may have the effect of reducing the quality of the YTS provision. There are hundreds of qualifying bodies in the United Kingdom and it is sometimes difficult to establish the worth of a particular qualification. The Government has recognised this problem and established a special body, the "National Council for Vocational Qualifications" which is seeking to provide a framework within which vocational qualifications can be developed and evaluated.

SKILLED WORKERS AND MASTERS

Introduction

Some countries have a very long tradition of training their craftsmen through apprenticeships under the care of "Mastercraftsmen". Nowadays such training is normally accompanied by education and training provided away from the workplace. This system of alternately on and off-the-job training is now often referred to as "alternance" training, particularly in documents produced by the Commission of the European Communities or by the European Centre for the Development of Vocational Training (CEDEFOP) in Berlin.

For historical reasons, some countries have emphasized full-time training in classrooms and practical workshops as the main methods, but in recent years they have come to recognise the importance of the workplace as a place of learning, so that this inter-weaving of off-the-job and on-the-job learning is being adopted widely in Europe.

It is worth noting, in passing, that it is possible to distinguish five potential elements in the process of alternance, and these are not represented equally in the different systems. The five elements are:

- off-the-job general education to broaden the understanding of the young person in terms of the society in which he or she lives;

- off-the-job instruction in the theoretical elements that underpin the occupation or group of occupations being studied;

- off-the-job training in workshops or laboratories to impart the basic skills involved in the practical side of the occupation or group of occupations;

- formal on-the-job training to ensure that the trainee is able to cope with the total job in the workplace, i.e. under the normal conditions and pressures that arise;

- competence is somewhat more than the accumulation of a number of separate skills and pieces of information;

- work practice to enable the young person to appreciate and experience the wide range of situations encountered in the workplace over a period of time.

It is notable that all these elements are present in the Apprenticeships systems in France and West Germany, for example, but not in some other countries.

The Mastership system, which has roots going back for centuries and is part of the heritage of the continent of Europe and of the British Isles, is only vestigial in the United Kingdom, but still powerful in, for example, West Germany and Belgium.

However, it is important to recognise that in many countries the formal apprenticeship system covers only a limited number of occupations, and even in some cases where the apprenticeship route exists, many young people still acquire their skills informally on the job.

This subject is vast, and in order to avoid undue repetition, certain aspects of vocational training have been emphasized in the sections for one or two countries, but not in every case. It is useful to look at the Ireland section, for example, to see the vast range of occupations which fall broadly at the skilled worker level, and to note that in some cases there is little more than on-the-job training, in other occupations there are training systems but not used uniformly, and there are also a number of occupations with well designed and conducted apprenticeship schemes under the aegis of FAS in the Republic of Ireland.

In interpreting the information in this chapter it is important to recognise that apart from the variation in the level of skill required from job to job, an occupational title in one country may mean something quite different (especially in skill level) to an occupation with a similar title in another country.

It is impossible to do justice to the rich variety of training schemes in each country, but the following account is intended to highlight what appear to be the most significant features in each case. It is interesting to note the different emphases in the occupations in different countries, reflecting in some cases their history, but in most cases their current industrial and commercial priorities.

Belgium

Since 1983 young people must remain at school in Belgium until the age of 18, either in full-time education or on part-time courses. Thus many full-time students take a wide variety of vocational courses in craft, technical and clerical-type occupations, e.g. cabinet maker, tailor, keyboard operator, bank clerk, butcher, plumber.

For young people between the ages of 16-18, part time education and vocational training may be complemented by work (a) in a firm, or (b) under a master craftsman with a normal part-time contract of employment, or (c) in an ONEM work experience scheme, or (d) as an apprentice with a firm or master craftsman. ONEM (the "Office Nationale de l'Emploi") is the Government's National Office for Employment.

Belgium's special "Ministry for the Middle Classes" is responsible for the craftsman, self employed and the small business sector. Those who are successful in the examinations and practical tests following an apprenticeship with a master craftsman are awarded a certificate approved by the "Ministre des Classe Moyennes". Training for those who set up and manage businesses is taken seriously in Belgium.

The system of "alternance" or linked work and training has a long history in Belgium and apprenticeship for manual crafts (e.g. baker, auto-mechanic, hairdresser) normally takes the form of on-the-job training by a skilled worker coupled with both technical and general education off-the-job.

This apprenticeship generally lasts three years and much of the training takes place under a contract with a master craftsmen (on-the-job) and in the continuing training institutes for the "Middle Classes" (off-the job). Examinations and practical tests for apprentices are overseen by "juries" which are recognised by the Ministry of National Education. This system of apprenticeship is being used increasingly in larger companies.

It is of interest to note the wide range of occupations for which there are apprenticeships currently: they can be grouped as follows:

- Food (e.g. butcher, fishmonger, baker)
- Textiles (e.g. tailor, embroiderer, dressmaker)
- Wood (e.g. carpenter, wooden floor maker, furniture restorer)
- Leather (e.g. cobbler, orthopaedic shoemaker, saddler)
- Metal (e.g. farrier, plumber)
- Engineering (e.g. motorcycle mechanic, office machine mechanic)
- Electricity (e.g. installation electrician, audio-visual technician, refrigeration engineer)
- Precision Engineering (e.g. clock repairer, weapon-maker and repairer)
- Construction, Stone and Concrete (e.g. bricklayer/concreter, asphalter, ornamental moulder)
- Painting and Decorating (e.g. exterior decorator, craftsperson in wall and floor covering, set decorator, as on the stage)
- Printing (e.g. offset printer, silk screen printer, bookbinder)
- Glass (e.g. glazier, glass cutter/decorator)
- Photography (photographer, photoengraver)
- Personal Services (e.g. mens hairdresser, dental technician, beautician)
- Horticulture (e.g. market gardener, florist, nurseryman)
- Synthetic Materials (e.g. acrylic vessel maker, chassis and doormaker, plastic object maker)
- Music (e.g. stringed instrument maker, piano tuner-repairer)
- Miscellaneous (e.g. aquarium maker, restorer of antiques, window dresser)
- Animals (e.g. dog breeder, riding school manager)
- Commercial (Retail, Wholesale, Commercial Services)

Unfortunately it is not possible to translate these terms simply or precisely in every case as there are no strictly comparable terms in English.

Apart from the traditional trade training it is possible for a young person between the ages of 16 to 18 to take up a short form of apprenticeship (normally between 6 months and two years) in clerical and commercial subjects designed and provided by a company. The company must obtain approval for the training content, appoint an individual to be responsible for the training, allow the trainee to attend general and theoretical classes at a school or approved training centre and provide the trainee, at the end of his or her training, with a certificate specifying the content and duration of each component of the programme.

There are a number of joint apprenticeship boards, attached to the different sectors of industry and set up by the National Labour Council. Membership of these boards includes representatives of employers, trade unions, the Ministry of Labour and Employment and the Ministry of National Education.

Training for many occupations is provided within the upper secondary level schooling, e.g. bank clerk, mechanic, electrician, cabinet maker, seamstress, keyboard operator.

Recent vocational training at the skilled worker level provided by ONEM may be conveniently grouped as follows:

- Construction, e.g. bricklayer, tiler, painter;
- Metalwork and Electricity, e.g. welder, pipeworker, sheet metalworker, automobile mechanic, industrial installation electrician;
- Textile and clothing manufacture, e.g. sewing machinist, knitting machine operator,
- Automation, e.g. hydraulics, pneumatics,
- Microelectronics
- Robotics
- Horeca (Hotels, Restaurants and Catering)
- Graphic Techniques, e.g. reprographics, offset litho;
- Diamond Workers, e.g. diamond cutter, diamond polisher;
- Miscellaneous, e.g. fish filleter, turner-polisher.

In Belgium there are special courses of training for the "chef d'entreprise" in a number of occupations - in virtually all the areas where there are apprenticeships.

Denmark

Young people in Denmark have an opportunity to study a number of practical subjects in the curriculum at secondary school, from the eighth form (aged 14 years) onwards. The subjects which may be studied include typing, photography, drama, film, electronics, and information technology. The curriculum also includes vocational guidance.

As an alternative to the Gymnasium (upper secondary school), young people can take a variety of routes including training as teachers, librarians, social workers, health services workers (nurses etc.), technicians and seamen, mostly in specialised colleges. Other alternatives include taking Higher Preparatory Examination Courses or entering apprenticeships in both the crafts and in business occupations, or basic vocational training (known as "efg" - erhvervs fagliche grunduddanelse) covering a group of occupations (known as a field), i.e.

1. Construction (e.g. electrician, bricklayer, housepainter)
2. Graphic trades (e.g. offset printer, typographical technician, silk screen printer)
3. Commercial, Clerical and Public Administration (e.g. Bookseller, wine and tobacco retailer, general office worker, bank clerk, insurance clerk, doctor's secretary/ receptionist)
4. Iron and metal (e.g. iron and metal grinder, plumber/ pipesmith, farm machine mechanic)
5. Agriculture (e.g. landscape gardener, fruit and berry grower, animal farmer)
6. Land transport (e.g. mobile crane operator, railway worker, long distance truck driver)
7. Foodstuffs (e.g. waiter, cook, baker, butcher, dairyman)
8. Services (e.g. milliner, furrier, shoemaker, chimney sweep).

Apprenticeship usually takes from two to four years with training in the firm complemented by education in a technical school, commercial school or other specialised schools. Apprentices must pass both written and practical trade tests before being awarded the journeyman's certificate.

The Basic Vocational Education (EFG) route takes from three to five years. The first year provides an overview of the whole of the field (i.e. the groundwork for all the trades in the group) and this is taken at a vocationally oriented school (technical school, commercial school or other specialised school) and the curriculum is divided into three parts:

- special subjects, covering theoretical and practical work in the chosen field;
- common core subjects studied by all students, e.g. Danish, foreign languages, sports, mathematics, social studies, management studies;
- optional subjects chosen by the students, e.g. creative art, photography, psychology.

The students then continue their studies in their chosen occupation for a further two to four years, with training in the firm and education in a school or college taking place alternately.

There are written and practical tests before the students are granted their final certificates.

There are special courses and examinations for those who enter the public service, including the State and community administrations, post office and the railways.

Federal Republic of Germany

There is a concensus between the Federal and Laender governments, employers and the trade unions about the need to invest in people and in the future, and they are each prepared to play their part and to pay the cost. This partnership is particularly well exemplified in the way that the overwhelming majority of young people in West Germany receive a sound basis of vocational training either through the "dual system" (see below) or through full-time courses.

The Federal Republic of Germany ("West Germany") has a large number of special vocationally oriented upper secondary schools ("Fachoberschule") or vocational schools ("Berufsfachschule") for full-time pupils and for those who continue part-time, generally in an apprenticeship, there are special vocational schools known as "Berufsschule". An alternative secondary school, the "Berufsfliches Gymnasium" has a vocational emphasis in preparing young people for higher education, whereas the Berufsfachschule aims to give the students a vocational qualification.

The main system for training young people in West Germany is the Apprenticeship, often known as the "Dual System", as it consists of an extended period of study, part-time off-the-job in a vocational training school, coupled with on-the-job training in the company. The duration of this training is usually three years or so, depending on the occupation.

The aim is to ensure that as far as possible every school leaver has the opportunity to receive a training course that gives him or her a "vocational qualification" - not some random

collection of unrelated parts, but a carefully planned government-controlled programme within a State-recognised "trained occupation", with the training period of three years or so. Other kinds of training for young people are prohibited by law.

"Trained occupations" are recognised by the State when they conform to certain criteria, notably that the training will ensure a nation-wide, uniform, inter-sectoral qualification which guarantees the occupational mobility and flexibility of the trainees: the training must meet the needs of more than just one company or industrial sector.

This policy promotes the mobility of the labour force, ensures uniform quality standards, creates a transparent labour market and provides young people with a firm basis for further learning and development. One of the major reforms which has been achieved over the last decade or so has been the introduction of a year of broader-based training, covering a whole 'field' or group of trained occupations, before the trainee focusses on his or her particular occupation.

For those firms which are unable to offer the full range of on-the-job training, there are organised opportunities to send the apprentices temporarily to other firms or to special inter-firm training workshops.

This apprenticeship system is governed by Federal Law which requires the "training company" to enter into a binding contract with the trainee. Broadly speaking the trainee accepts a comparatively low wage whilst in training, the Laender in collaboration with the cities and municipalities provide the off-the-job education and training free, and the employer must provide on-the-job training, and pay for the trainees' protective clothing, equipment, study books and so forth, as appropriate to the occupation.

The Federal Ministry of Education and Science is responsible for policy formulation and co-ordination of the Apprenticeships system and is consulted by other Ministries concerning occupations in which they have an interest.

Much of the detailed work on training regulations for the "trained occupations" is carried out in the Federal Institute for Vocational Training ("Bundesinstitute fuer Berufsbildung", BIBB) which has its headquarters in West Berlin, and some of its staff in Bonn. The Federal Institute for Vocational Training brings together representatives of the employers, the trade unions, the Laender and the Federal Government in its Management Board. The function of the Board is to decide on the programmes of work of the Institute and submits recommendations to the Federal Government on the development of the vocational training system and also the regulations for 'trained occupations'. The corresponding vocational education and training (for each trained occupation) is determined by the Laender Governments and the two documents are published simultaneously.

No firm is compelled to take apprentices, and no young person is obliged to take up this form of training, but there is no shortage of suitable companies offering training places, and almost all the young people who leave full-time education at fifteen apply for apprenticeships.

As indicated above, for each occupation there is a specific vocational train ng regulation

which describes in some detail the subjects to be covered, the skills to be acquired, the training to be given and the stages at which written and practical tests are to be taken. The skilled worker certificate ("Facharbeiter") or journeyman's or craftsman's certificate ("Geselle") is awarded only when the trainee has passed the requisite theoretical and practical tests.

The training for a watchmaker, for example, includes knowledge of the materials used in watchmaking, the physical and mechanical principles involved in clock mechanisms, including electrical and electronic clocks, the analysis of the functional relationships of the elements of clocks, the ability to undertake relevant calculations, to diagnose faults, draughtsmanship, i.e. the ability to draw and interpret diagrams of clocks and watches, and to solve problems and undertake repairs. The regulations cover all the health and safety aspects of the work.

The practical tests involved for the watchmaker include the machining of watch parts, the repair, assembly and adjustment of watches, and the measurement and calculation of electrical parameters. Studies include business administration, social security systems, labour legislation and other legal matters. The final examinations and tests include oral, practical, and theoretical elements, including multiple choice questions.

This example should serve to show the exhaustive nature of the regulations and the broad nature of the education and training provided. It is not, as commonly mis-represented by some commentators, a narrow vocational training. Any young person who has successfully completed an apprenticeship under the "Dual System" in West Germany is a rounded individual who has applied him or herself to a series of demanding studies and practical skills - a worthy member of the workforce.

At the local level the apprenticeships are overseen by the appropriate Chambers. A large proportion of the apprentices in West Germany are trained in the smaller, often craft-based firms who belong to the Chamber of Craftspeople - the "Handwerkskammer". Another large number are trained under the supervision of the Chambers of Industry and Commerce.

A proportion of those who complete their apprenticeships continue with their studies for the "Meister" qualification. Here through part-time study they learn how to manage an operation, including how to manage people and how to train their subordinates. In the Crafts sector they learn, in effect, how to run a small business, covering all the aspects of marketing, selling, money management and dealing with the authorities. In Industry they learn how to manage as supervisors or junior managers.

Training in an apprenticeship may be taken in a wide range of occupations (currently over 400), within the following groups:

- Commerce and Administration, covering the retail business and customer advisory services (e.g. retail salesperson, food salesperson, petrol pump attendant); office procedures and commercial administration (e.g. office worker, bank clerk, secretary, personal assistant); law and public administration;
- Metal technology, covering manufacturing and metalwork (e.g. turner, machine mechanic), metal technology and fitters (e.g. blacksmith, sheet metal worker, pipe fitter);
- Electrical technology, e.g. electrical fitter, radio and television technician;
- Building technology, e.g. concrete worker, skilled road construction worker, draughtsman, plasterer;

- Woodworking, e.g. carpenter, boatbuilder (wood);
- Textiles and clothing, e.g. men's tailor, seamstress for ladies fashion, glovemaker, milliner, textile mechanic;
- Chemistry, physics and biology, covering laboratory technology (e.g. biology laboratory technician, paint laboratory assistant) and production technology (e.g. skilled chemical worker, materials tester);
- Printing technology, covering type setting and pressure mould making (e.g. compositor) and printing technology and processing (e.g. bookbinder, printer);
- Colour technology and furnishing (e.g. designer, windowdresser)
- Health, e.g. nurse, midwife, hospital helper
- Physical culture
- Food and domestic science, covering the hotel and catering trades (e.g. waiter, cook, hotel assistant), baking and confectionery (e.g. baker), meat preparation (e.g. butcher);
- Agriculture, including animal husbandry and horticulture, e.g gardener, horse's groom, winegrower.

A company is not allowed to take on trainees under this apprenticeship system unless it has a qualified master to look after them, or in certain cases (e.g. a medical assistant) unless a professionally qualified person undertakes to supervise their on-the-job instruction.

Trade Unions in West Germany have a highly positive attitude towards vocational training and they collaborate closely with employers to ensure that their Members are properly trained to do their jobs effectively and safely.

This high level of training for skilled workers and "masters" has resulted in considerable delegation of decisions in many companies with comparatively "flat" heirarchies (in relation to those in France or the United Kingdom, for example).

Greece

Among the provisions for young people after the compulsory education period there are the Technical-Vocational Lykeions and the Technical-Vocational Schools. The variety of courses provided within upper secondary education, include technical and vocational options with scope for movement between courses of study and institutions.

At the Technical and Vocational Schools, courses are provided in about fifty skilled occupations, in 14 "departments":

1. Mechanical engineering
2. Electricity
3. Elecronics
4. Building construction
5. Agriculture and cattle breeding
6. Dressmaking and housekeeping
7. Handicrafts

8. Office procedures and commercial retailing
9. Tourist professions
10. Gold and Silver-smithing and watchmaking
11. Leather goods processing
12. Hairdressing
13. Spinning
14. Mining

These are normally two-year courses.

There is also a well-developed apprenticeship system in Greece, modelled broadly on the West German Dual System. This is organised by the Organisation for Manpower Employment (OAED). Apprentices work in both the public and private sector during the daytime and for four afternoons a week attend theoretical classes and practical workshop sessions in special training centres - "Apprenticeship Centres".

There are some 40 apprenticeship training units spread around the country, with about 30 in the major towns. Each centre offers between 20 and 30 different specialisations. These can be changed to reflect priorities in the local labour market.

Subjects covered include:

- pottery
- silver and gold-smithing
- graphic arts
- hairdressing
- dressmaking
- watchmaking
- plumbing
- mechanic
- electrician
- car mechanic
- car electrician
- electronic engineering craftsman
- internal combustion fitter
- chassis worker
- toolmaker
- carpenter
- welder
- draughtsman
- construction worker
- agricultural machinery mechanic
- refrigeration mechanic
- agricultural cooperative worker.

Apprenticeships normally last for three years.

Spain

The Ministry of Education and Science in Spain has instituted a new programme of rules and regulations related to vocational training ("Formacion Profesional") aimed at creating new and specialised courses to cope with changes in technology. The Ministry is also seeking the support of employers (in both the private and public sector) and trade unions to include these vocational qualifications within their collective agreements.

The use of vocational titles (e.g. "Tecnico Auxiliar" or "Tecnico Especialista", see below) is strictly controlled in Spain by the Ministry of Education and Science, which lays down the conditions under which these titles can be awarded.

The Ministry is also seeking to promote a modular system of vocational training, such that where shorter programmes of training are completed with satisfactory attendance and the achievement of adequate levels of proficiency, these "modules" may be accumulated to achieve the award of a vocational title.

Secondary Education ("Ensananzas Medias") in Spain (what would be termed upper secondary level in many European countries) is provided in two alternative forms, an academic and a vocational stream.

The vocational stream within the secondary education system is known as "Formacion Profesional" (FP), and this provides vocational training at two levels, FP I, leading to the qualification and use of the title "Assistant Technician" and level FP II, leading to a qualification and use of the title 'Specialised Technician'

The "Ensenanzas Medias" is undergoing reform to accommodate the raising of the school leaving age to sixteen, and these changes are expected to be widely implemented during 1989 as the culmination of a series of trials in selected areas which has been progressively widened out to include more schools.

A reform is currently in progress where there will be five options available at the upper secondary level (aged 16-plus): social and human sciences, natural sciences, linguistics, technical-administrative training and technical-industrial training.

The aims of these reforms include the merging of academic and vocational streams incorporating technical and practical elements, and improving links between the education system and society.

Vocational training is classed as a form of secondary education in parallel with academic studies and is organised into three levels:

- First-level vocational training;
- Second-level vocational training;
- Third-level vocational training.

First-level vocational training is free and compulsory for those young people who do not enter the academic secondary course to complete their basic general education. There are no entry requirements. This provides a course of general education plus basic knowledge and skills in a particular occupational field. The course lasts two years and the students receive a junior technical qualification ("Tecnico Auxiliar"). This certificate covers the three areas of general studies, theoretical studies related to the occupational field, and related technical and practical studies.

Second-level vocational studies provides more specialised education and training, and for those who have completed the first level, there is a two year course (or for some occupational areas, three years). This second-level training is also open to young people who have completed the three-year course of academic ·secondary education. This course leads to the intermediate technical qualification ("Tecnico Especialista") covering business studies, technical and practical studies and supplementary studies.

Third-level vocational studies are described in the section on Technician Level Qualifications.

The branches available at the first level include:

Administration and commerce, including secretarial;
Agriculture, including agricultural machinery, livestock farming, intensive farming, forestry, rural home economics, indoor livestock farming;
Graphic arts, including layout, printing, binding and photomechanical reprographics;
Vehicle engineering, mechanical and electrical;
Construction, including bricklaying, stonemason, cement, reinforced concrete, roofing, machinery;
Drawing and design;
Electrical engineering and electronics;
Home economics;
Tourism and hotels;
Audiovisual;
Wood crafts;
Mechanical Engineering and metalwork;
Mining;
Fashion and dressmaking;
Maritime studies;
Hairdressing and beauty treatment;
Leather, including patternmaking and cutting, preparation, shoemaking;
Chemistry, including plant operatives, laboratory operatives;
Health, incorporating practical medical training;
Textiles;
Glass and ceramics.

In most cases these subjects can be taken at the second level, with additional specialisation in some areas, for example:

Computers in management;
Viticulture;
Forestry;
Horticulture;
Engraving;
Plumbing;
Painting;
Industrial design;
Building design;

Electrical installation and wiring;
Industrial electronics;
Communications electronics;
Machine tools;
Marine engineering;
Coastal navigation;
Anatomy;
Pathology;
Nursing;
Radiodiagnosis;
Speech therapy;
Dental prosthesis;
Radiotherapy;
Spinning;
Weaving.

The need for practical work experience and on-the-job training is recognised and for full-time students this is achieved by the arrangement of practical work experience on employers premises.

Students who fail to complete their training to a satisfactory standard may be required to repeat the year.

For those who are unable to follow these studies full-time there is provision for obtaining the "Tecnico Especialista" qualifications by part-time or distance learning.

France

The Ministry of Education play an important role in vocational training in France and this is described in Chapter 2. As mentioned previously, the"Delegation de la Formation Professionelle", responsible for vocational training within the education system is directly responsible to the Education Minister's Cabinet.

In the early 1970s the favoured route to a vocational qualification was by full-time study in a school, but over the past ten years or so the importance of on-the-job training and practical skills has been recognised, and considerable steps have been taken to upgrade the quality of apprenticeship training and also its reputation among young people and their parents.

Vocational education and training can begin at age 14 or 15 when the young person can transfer to a "Lycee d'Ensignement Professionel". Continued study in the more academic "Lycee" can lead to a "baccalaureat de technicien" (BTn - a technical baccalaureat) or to "brevet de technicien" (BT - a technical diploma) as an alternative to the general baccalareat.

A baccalaureat qualification is required for entry to the universities, the"Ecoles" or "Instituts superieurs" in universities or the "Grandes Ecoles".

The BTn is awarded after written, oral and practical examinations, and covers both general

and technical subjects. The BT is also awarded after written, oral and practical tests and is regarded as a final qualification in its own right. Holders can, if they wish, continue their education in the "technicien superieurs" section of the "Lycees" or, in certain cases, in the "instituts universitaires de technologie" (IUT - University Institutes of Technology) to prepare for the "diplome universitaire de technologie" (DUT - University Technical Diploma).

Young people who enter the LEP at 14 generally take the three-year course leading to the "certificat d'aptitude professionelle" (CAP - vocational training certificate) which represents skill and knowledge in a particular trade. Young people who enter the LEP having completed four years at the college can study for the "brevet d'etudes professionelles" (BEP - vocational studies diploma) or for the CAP. The BEP is broader in character than the CAP, and covers the basic knowledge and skills needed in a group of related occupations, e.g. in the industrial, commercial, administrative or social sector.

Those students who do well in the CAP or BEP examinations may take further studies to obtain the BT, or BTn. Recently new qualifications have been devised for vocational and technically oriented young people, i.e. vocational and technological baccalauretes.

The definition of an "artisan" or craftsman and a "maitre artisan" (mastercraftsman) and those who are entitled to describe themselves as such is laid down in French Law, and this was recently re-inforced and revised in 1988. A number of specific qualifications were mentioned in this regard including "le certificat d'aptitude professionelle" (CAP) and "l'examen de fin d'apprentissage artisanal" (EFAA), final artisan apprenticeship examinations. These new laws also refer to a "Commission for Qualifications" established in each Region of the country.

The particular status of Artisans and Mastercraftsmen is safeguarded by the Ministry of Commerce, Artisans and Services. Important legislation in 1988 dealing with the legal recognition of occupational titles and requirements for craftsmen and mastercraftsman was jointly agreed between this Ministry, the Ministry of the Economy, Finance and Privatisation, the Ministry of Justice, the Ministry of National Education and the Ministry of Social Affairs and Employment.

A system has been established for the preparation of updated definitions of what is involved in the skills of each type of craftsman and this should feed through into the training systems in due course.

The apprenticeship system has developed extensively over the last ten to fifteen years in France, and young people may now study for a variety of qualifications via this route, e.g. "le certificat d'aptitude professionelle" (CAP), "le brevet d'etudes professioneles" (BEP), "le brevet professionnel, "le brevet de technicien" (BTN),"la mention complementaire", "le baccalaureat professionel" (Bac professionnel), "le baccalaureat technologique" (BT), "le brevet de technicien superieur" (BTS).

Apprenticeships are controlled by the Ministry of Education and special apprenticeship councils for each sector of industry with the close involvement of employers and also trade unions. There is a full programme of education - involving French composition and mathematics as well as technical subjects - so that the young person develops as a citizen and not just as a worker.

There is an extensive programme of supervised practical tests to ensure that the apprentices are capable of doing the job before being given their certificates.

It is important to stress the fact that the qualifications obtained through the apprenticeship route now equate fully with those obtained by the full-time study route. In earlier years they were considered inferior.

Ireland

The post-primary vocational schools are administered by vocational education committees on which sit representatives of the local authority alongside representatives of the local trades and industry together with educational experts.

At the end of compulsory schooling, pupils may continue their education for a further two years to take the examinations for the "Leaving Certificate", find a job or enter an apprenticeship. Those who have not found such an opportunity may enter a special vocational preparation and training programme organised in the secondary, vocational, comprehensive or community schools, or in the Community Youth Training Programme (where they can acquire skills in basic construction work of value to their local communities) or the Community Training Workshops (where they can acquire basic skills training, life and social skills, and if necessary, remedial education in literacy and numeracy).

Most training for young people is organised by FAS (the Training and Employment Authority), CERT (Council for Education, Recruitment and Training for the Hotel, Catering and Tourism Industry) and ACOT (Council for Development in Agriculture). Some training is also provided through Community Training Workshops and Travellers' Training Centres.

At the national level responsibility for apprenticeship education and training lies with FAS in collaboration with the Department of Education. In practical terms, the education and training of apprentices involves a partnership between industry, FAS and the Vocational Education Authorities. Industry employs the apprentices and provides on-the-job training and experience. FAS is the registration authority, and it organises and monitors their training and provides off-the-job training for most apprentices for the first year of their studies.

The Vocational Education Committees provide structured theoretical and practical programmes to equip the apprentice with knowledge and understanding of the basic principles which underpin his or her craft. This basic understanding is vital if the apprentice is to be able to take initiatives, to plan and to develop in the exercise of his or her trade.

There was a major review of the apprenticeship system in 1975, and at the time of writing another major review is in progress and proposals for change are likely to be laid before the Minister of Labour later in 1989. The current system provides for a period of off-the-job training for apprentices during their first year, at an approved training centre; release from work for courses in educational establishments in the first three years of the apprenticeship; standard national training and education curricula for each trade; a four-year apprenticeship in general; a system of testing and certification coupled with the award of a certificate for apprentices; a planned annual intake to ensure a sufficient number of workers in skilled

trades.

A special Committee has been set up to give advice on the curricula for apprentices education and training and on a system of testing and certification.

ACOT has national responsibity for education, training and advice in agriculture and it administers a training programme for new entrants leading to a Certificate In Farming. The programme lasts for three years and can be taken either by means of a one year full-time residential course at an agricultural college followed by work experience on a farm coupled with short courses, or by part-time studies coupled with work experience on a farm.

Whichever route is taken there is a requirement for a "placement", i.e a period of twelve weeks in a selected farm away from home the 'host farm', and there is also a management module of training to be taken in the third year. While on work experience the trainee is supervised by an education officer and engages in a series of projects which require action, recording of results and reporting. There is also a three-year farm Apprentice scheme administered by the Farm Apprenticeship Board, a private body grant-aided by ACOT.

Apart from apprentice training, FAS provides a variety of training courses for young people in its own training centres and through its External Training Division: the subjects covered include career development, electronic and mechanical assembly, sales training, start your own business and youth enterprise programmes. Some of these courses are certificated by FAS and external agencies, e.g. EOLAS (welding), City and Guilds, Department of the Environment (Heavy Goods Vehicle Licence).

CERT provides full-time and block release courses for craft and management trainees. These courses, provided in conjunction with the education authorities, are principally aimed at first-time entrants to the labour force who propose to follow careers in catering and related occupations. CERT also conducts shorter courses in basic skills for unemployed persons.

Courses for those who wish to work on sea fishing vessels are provided under the auspices of the Irish Sea Fisheries Board, which covers training for new entrants and in-service training. Courses include such subjects as small boat handling, shipboard emergency procedures, basic and advanced deckhand, first aid, radiotelephony, Certificates of Competency.

Occupations for which the training is provided mainly on the job, but with external courses as appropriate, include:

Law Clerk
Data Entry Operator
Bus Conductor
Depotperson (Railway)
Bread Salesperson
Stable Groom
Courier (Resident Representative)
Firefighter
Serological Assistant
Operator (Radio and Television)
Clerical Officer (e.g. in the Electricity Supply Board)
Computer Operators
Air Hostess/ Air Steward (Aer Lingus)
Ground Hostess/ Passenger Clerk (Aer Lingus)
Installer (telephone lines and equipment)

Occupations for which there is recognised training

but not an apprenticeship include:

Bus Driver
Hotel House Assistant
Secretary Typist
Hardware Assistant
Professional Dancer
Security Officer
Horticulturist
Display Artist
Sea Fisherman
Watch and Clock Technician
Professional Actor/ Actress
Travel Agent Clerk
Advertising Executive

In some cases people without qualifications are able to gain employment in the above occupations. Some of these occupations can be exercised at various levels and normally qualifications are needed to gain promotion.

Occupations for which there are apprenticeships include:

Air Corps
Aircraft Mechanic
Compositor
Letterpress Printer
Lithographic Printer
Baker/ Confectioner
Farrier
Blacksmith
Carpenter Joiner
Coachmaker
Slater and Rooftiler
Painter/ Decorator
Coachpainter
Cabinet-Maker/ Chair-Maker
Glazier
Coachtrimmer
Electrician
Mechanical Fitter
Turner
Foundry Craftsperson
Metal Fabricator
Motor Mechanic
Bartender
Patternmaker
Plumber
Bricklayer/ Stonelayer/ Mason
Sheetmetal worker
Upholsterer
Woodfinisher
Stonemason
Welder
Woodcutting Machinist
Dental Craftsperson
Refrigeration Craftsperson
Hairdresser
Instrument Mechanic
Jockey
Jeweller

Occupations for which good basic educational qualifications are required (e.g. reasonable grades at the Leaving Certificates) and where training is provided mainly by the employer include:

Public Relations Executive
Clerk (e.g in a Building Society or Local Authority)
Higher Customs Officer
Production Assistant (Radio)
Engineering Operative (Public Transport, Road and Rail)
Tax Inspector
Social Welfare Officer
Clerk-Typist (e.g. in the Health Board or Local Authority)
Community Welfare Officer

Italy

There are a variety of opportunities for vocational training for young people who have completed their compulsory education. They may:

- start work immediately without any vocational training;
- enrol at one of the regional centres for vocational training;
- enrol at one of the state schools for vocational training;
- enrol at a secondary level II school to take courses which lead on to university level education or to vocational training in one of the technical institutes;
- start an apprenticeship.

The vocational training system is in a state of development with the regional authorities making major efforts to gear their training to the need of employers within their regions. The volume of training in agriculture is considerable, with basic level courses and refresher courses and also courses in specific skills.

Vocational skills in the agricultural sector can be grouped as follows:

- animal husbandry
- growing fruit and vegetables
- growing flowers
- cultivating vines, growing olives and producing cereals
- farm management and product marketing
- farm tourism.

Mostly the regional authorities entrust this training to recognised bodies, some of which operate at national level and some only at the regional level. Theoretical instruction is given in the classroom and this is accompanied by practical instruction on the farm or smallholding, and the same teachers cover both theory and practice.

Many large companies and public bodies have their own training departments which conduct initial job training and training to update their workers and prepare them for promotion.

Although apprenticeships exist in Italy, the attendance at the eight hours off-the-job training required is not always adhered to by the apprentices. The employer receives some tax relief for taking on apprentices, but the system is mainly restricted to the manual crafts and small firm sector.

There is also a "Training-Work Contract" system whereby an employer can devise a suitable training programme for a young person (age 15 to 29 years) and receive financial support from public funds via the regional authority. To receive these funds the training programme must be approved and the firm must employ the trainee for a specified period. At the end of the period the employer can retain or dismiss the trainee, and during the training the firm receives the same tax reliefs as for apprentices. In essence this "Training-Work Contract" system is a method of encouraging firms to take on young people.

Luxembourg

Although three languages (Luxembourgish, German and French) are in common use in Luxembourg, the education and vocational training system is organised by a single Ministry of National Education (in contrast to the situation in Belgium).

On the vocational training side the Education Ministry collaborates closely with other responsible ministries and with professional and trade bodies.

Technical secondary education is provided in the "lycees techniques", some of which are specialised, e.g in the arts and crafts, or agriculture. There are three stages to these studies, an initial "observation and orientation stage" of three years, an intermediate stage of three years offering a full-time vocational course, or a part-time course which complements on-the-job training in an apprenticeship.

Vocational training for the crafts is organised by the Ministry of National Education together with the "Chambre des Metiers" and the "Chambre de Commerce" who are together responsible for the recognition of the vocational qualifications and diplomas and for the supervision of the vocational training.

The attainment of a vocational qualification is dependent on passing both written and practical tests. The standards for vocational qualifications are drawn up by the Ministry of National Education together with appropriate bodies, e.g. the "Chambre des Metiers" and the "Chambre de Commerce" and the "Chambre des Employes Prives".

The final qualification for an apprentice who successfully completes both the theoretical and practical tests is the CATP (certificate d'aptitude technique et professionelle). In some professions, as named by Grand-ducal regulation, students may be awarded a certificate of manual proficiency (CCM, certificat de capacite manuelle).

Apprenticeships are offered in the following groups:

- craft
- industry
- commerce
- hotel and catering
- agriculture
- domestic science.

To be admitted to these apprenticeships candidates must be at least 15 years of age. There are also technical courses at secondary level in the following areas:

- arts, crafts and industrial training, with sections for building, mechanics, machine tools, electrotechnology, chemistry,
- administration and commerce
- fine arts
- hotel and catering, with sections for hotel work, cookery and service
- agriculture
- ancillary medical and social studies, with sections for ancillary medical workers and special education instructors.

At the end of the intermediate stage students must decide whether to enter the upper stage of the secondary education (for technician level studies), or to study for a further year to sit for the CATP examinations and practical tests. Vocational qualifications are legally required in most of the craft areas and related areas.

Netherlands

The majority of vocational training establishments are either Roman Catholic, Christian Protestant or private and independent. This means that the content of the programmes will depend on the particular institutions concerned. Apprentices are linked into this system through the academic content of their training programmes.

Apart from educational opportunities, there are a variety of vocational training opportunities open to young people at age 16. Sixteen year-olds who do not wish to continue in full-time education are nevertheless obliged to attend part-time or two days a week for one year.

Most secondary education is provided in three different forms, i.e. pre-university education ("VWO"), general secondary education ("AVO") or vocational education ("BO").

Those sixteen year-olds who opt for part-time education can choose between a vocational training course under an apprenticeship, a course at an institute for early school-leavers, or one of the officially approved courses.

The categories for vocational training are:

- technical education including nautical studies
- domestic science
- agricultural education
- self-employment and small business education
- commercial education, including office work and finance
- teacher education, for nursery, primary and secondary teachers
- social work education, which includes youth and community work, social work, personnel administration, child protection, health care and sports
- art education.

'Lower level education ("LBO")' generally takes place before the age of sixteen, and can take several forms. At the lower technical education level the two year general course is followed by prevocational education with specialisation in building technology, food preparation, electrical technology or vehicle technology. Nautical education is provided at special schools covering marine fishing, inland navigation and occupations in the merchant navy or the ports.

There are also lower domestic science schools in which the two-year general course is followed by prevocational education with specialisations geared to domestic, catering, service and administrative occupations.

Lower agricultural education is geared to the needs of the local economy so that many of the special agricultural schools are small. In urban areas, alongside the general education young people may choose to study amenity horticulture, i.e. park and garden maintenance and floriculture. Some schools offer specialisation in food technology.

Lower small business education is biased towards retailing and mainly prepares young people for self-employment in the retail trade. Lower commercial education prepares young people to work in the clerical and financial occupations, where there is an emphasis on foreign languages.

After leaving school young people who hold an appropriate "LBO" qualification can take Intermediate Level vocational courses ("MBO") in a range of occupational areas up to technician level.

Intermediate technical education ("MTO") prepares young people for posts of a technical nature or in supervisory, financial or commercial occupations. Courses last four years, and a third of the time is spent in practical work under supervision. Specialisations include mechanical engineering, electrical technology, building technology, process technology and vehicle engineering.

At the same level young people may take two-year courses in nautical subjects, e.g. as ship's mates or in marine engineering. To gain a national certificate to qualify them for work in these occupations there are other conditions apart from the college diploma, including periods of approved experience at sea.

Intermediate level courses are also available in welfare and health care (including youth welfare, sport and beauty treatment), domestic science, social work, agriculture and horticulture (two to three year courses with an emphasis on people running their own businesses), small business (with special emphasis on the financial and commercial aspects of small business management, and including courses for those who wish to enter the hotel and catering industry) and commerce (three-year courses with specialisations in clerical, commercial, secretarial and administrative groups).

There is also a well developed apprenticeship system in the Netherlands, regulated by law. Apprentices receive a practical training on their employer's premises whilst following part-time studies at apprentice training schools, generally for one day per week. The apprentice and the employer/trainer enter a legal contract specifying the agreed programme of training to be given by the employer.

Apprentices are generally taken on as employees, but in areas of high unemployment where the employer feels unable to guarantee continued employment the young person may receive training as an apprentice in a company training centre or a centre set up by a group of companies and receive a training allowance rather than a wage.

There are 31 bodies which regulate apprenticeships covering in all some 350 occupations at the skilled, specialised operative or junior management level. These national bodies are responsible for producing training and examination schedules and for supervising apprentices at the workplace. There are also regional bodies which provide information on apprenticeships to young people, and may also provide advice and guidance. The governing boards of both the national and regional bodies have representatives from the employers and the trade union organisations.

For many occupations the training is provided in two phases, an elementary phase lasting one to three years and an advanced phase lasting a further two years.

An alternative provision is the "shorter intermediate vocational education" ("KMBO") which is open to all 16 year-olds who have followed a lower vocational or intermediate general secondary course (even if they have not passed the relevant certificates). The courses last for two years and contain guidance and revision as well as vocational preparation. The aim is to take young people up to about the standard of the elementary phase of the apprenticeship, i.e. to about skilled worker status, and both full-time and part-time routes are available.

Portugal

At the end of the compulsory period young people may thus continue full-time education in the Complementary Courses, either taking the academic option (three years) leading to higher education, or the technical-vocational option (three years) aimed at intermediate level vocational training, but which also gives access to higher education.

As an alternative to these Complementary courses the young person may take a vocational course lasting one year, supplemented by six months work experience and practice. The practical training is supervised by specialist teachers and technicians from the enterprises concerned.

Courses covered by this type of training include:

- agriculture
- electricity
- metalworking
- civil engineering
- jewellery
- typing/ secretarial work.

There is also an apprenticeship system organised by the Employment and Vocational Training Institute ("IEFP"), the Ministry of Education and selected employers.

The apprenticeship consists of a three-year programme for those who leave school at 14 years of age, and provides for 16 hours of general training plus 24 hours of technical training per week. Aprentices are not part of the workforce, but receive a training grant At the conclusion of this programme those who pass the examinations and tests are awarded a certificate of proficiency by IEFP, and also a certificate indicating the equivalent of nine years school attendance.

Five sectors were originally given priority for apprenticeships and national and regional apprenticeship committees were established to manage the system. The five sectors are:

- Agriculture and Foodstuffs (three-year courses in preparation of dairy products, cellarmen, canning, butchers and pork butchers, bakers and confectioners, market gardening and fruit growing)

- Electronics (three-year courses for telecommunication electronics, industrial electronics, laboratory electronics, consumer electronics, computer electronics, with the option of a fourth year of specialisation);
- Data processing (three-year courses for equipment salesmen and installers, software salesmen and installers, computer operators, programmers);
- Metalworking (three-year courses in metal turning, milling, fine metal working, electrical maintenance, metalworking for civil engineering, pipework and welding);
- Services (three-year courses for administrators, receptionists, salesmen, self-service operators, hairdressers and beauticians, with the option of a fourth year of specialisation in secretarial work, accountancy, assistant librarianship/ documentation and technical sales representation).

In addition to these schemes there are provisions for training at this level in:

- Health (e.g. nursing, audiometry, physiotherapy, orthoptics, laboratory work, radiology, occupational therapy);
- Tourism (porters, tourism, reception, cooking and pastrymaking, waiting and bar work;
- Agriculture (training in basic farming methods at college alternating with work on the family farm);
- the Maritime and Fishing sector (three-year general baccalaureate courses for marine engineers, radio officers, and pilots).

United Kingdom

Over the past two decades the number of apprentices in the United Kingdom have declined dramatically and many of these systems have disappeared completely or have been transformed. There are still apprentices in some occupations, e.g. engineering and hairdressing, but the system of training young people for skilled occupations in England Wales and Scotland is dominated by the "Youth Training Programme" organised by the Training Agency of the Department of Employment. The Training Agency has taken over the training responsibilities of the former Manpower Services Commission.

The Youth Training Programme is open to all those who leave school at 16 years of age and is intended to provide two years of vocational training leading to a vocational award of some kind. During the first year the trainee spends at least twenty percent of his or her time on off-the-job education or training and this is reduced in the second year. The training programme must incorporate an initial period for assessment and guidance, and include training in basic skills and facilitate the development of personal effectiveness.

Most of the young people are taken on by Managing Agents (private or public bodies) who enter into a training contract with them, subject to the approval of the Training Agency, and then organise the on and off-the-job training and work experience. Where there are nationally agreed programmes for particular types of trainees (e.g. in the Hotel and Catering Industry) the Managing Agent would normally be expected to offer this type of training leading to the nationally recognised award.

Managing Agents may be employers who will provide on-the-job ·training on their own premises and organise off-the-job training in collaboration with local authority or private colleges. OtherManaging Agents collaborate with a range of employers who provide the on-the-job training and work experience component of the YTS programme.

In Northern Ireland there is a similar scheme for young people known as the Youth Training Programme administered jointly by the Departments of Economic Development and the Department of Education for Northen Ireland. Due to the high youth unemployment, the employers play a less significant role in this programme compared to their role in the YTS in Great Britain.

Over the years this system of vocational awards has grown in an ad-hoc fashion, with many of the vocational educational awards being granted by independent authenticating bodies such as the City and Guilds of London, the Royal Society of Arts and a number of sector specific bodies. In all there are some 300 different bodies offering vocational qualifications of one kind or another up to the professional level.

Some of these qualifications have official recognition in one form or another, and a few are mentioned in collective agreements between employers and trade unions, but the main criteria for the value of a vocational qualification in most cases is the extent to which individual employers take this into account when they employ staff or consider them for promotion.

Examinations and qualifications are provided for some 300 vocational subjects through the City and Guilds of London Instutute (CGLI) which is a financially independent body, raising most of its income from examination fees. A large proportion of the occupations covered are at the craft level and there is a well developed system for testing practical skills in a number of subjects. In the clerical, commercial and other sectors examinations are conducted by the Royal Society of Arts (RSA), or by the London Chamber of Commerce.

Recently the Government established a new body, the National Council for Vocational Qualifications, charged with the responsibility of creating a framework for the vocational awards in England and Wales and persuading the various qualifying bodies to cooperate in bringing their awards into this new framework. Agreement has now been reached in a number of areas, particularly at the skilled worker levels.

TECHNICIAN, PROFESSIONALS AND MANAGERIAL LEVELS

Introduction

This chapter deals with vocational qualifications at the technician and sub-professional level, and at the professional and managerial level.

In most European countries the traditional "professions" are controlled by law. These are often referred to on the continent as the "liberal professions" since the words "profession" or "profesion" in languages other than English generally means simply "occupational", and is generally used to decribe occupations at the skilled worker level.

In the Member States where they are controlled by law, the appropriate government department (e.g. the Ministry of Health for medical doctors, the Ministry of Justice for lawyers) approves (or may even prescribe) the education and training programme, in some cases playing an active part in the examination system, and generally accords recognition to the relevant professional association or chamber. Some of these associations are national and in some countries they are regional in character.

Generally speaking training for the professions involves attending a university to obtain a relevant degree coupled with approved practical experience and training.

In many countries the vocational qualification, particularly at the technician level, is closely related to the kind of educational institution involved, and it is necessary to describe these in many cases to present a clear picture of the technician level training system.

In many instances "management" as such is not recognised as a separate subject. The cultural norm in Europe in the past was to acquire skills in a particular area and then to acquire the skills to manage in that area. There is no German word that equates with the anglo-american concept of 'management' in the abstract sense.

In French the word loosely translated as "management" is generally "gestion", which really means efficient administration of a function. A manager in France is either an "administrateur" or a "directeur", and in Germany he or she would be a "leitende Angestellte" (leading member of staff), or "fuehrer" (leader), or a "direktor", i.e. the leadership of a function is distinguished clearly from the direction of an enterprise, concepts which are often confused in the UK.

Thus management is most often taught in the context of what has to be managed.

Belgium

Technician level qualifications can be obtained in a variety of subjects (e.g. Journalism, Librarianship, Computing) at Technical Colleges.

In the Dutch speaking area of Belgium there are eight types of non-university higher education:

- technical
- economic
- agricultural
- paramedical
- social
- arts
- pedagogical
- maritime.

In general these courses focus on underlying knowledge and its applications in a wide area of occupations mostly in industry, commerce, transport, agriculture, medical assistance, social work, translation and interpreting, applied arts and the media. This type of education can be "short-term", i.e. a period of two, three or four years, or long term, which equates to a final university degree level, with a minimum of four years of study in two cycles.

The higher short-term non-university education leads to graduate diplomas ("graduaat") in various disciplines and to employment as a midwife, a nurse, a social worker, a librarian or a teacher in nursery, primary and lower secondary education.

An analogous system exists in the French-speaking areas of Belgium, also leading to the graduate diplomas ("graduat").

Academic training in vocational subjects is provided both in the universities and at trade training colleges where studies are divided into three stages. These are the pre-examination or candidature stage (2 years), the Diploma examination (the first degree level attained after 4 or 5 years) and the Doctorate (which can take up to 7 years, e.g. for medical students).

In addition to these colleges and universities there are a number of specialised institutions which cater for professional qualifications in particular areas, e.g. the "Ecole de la marine marchande" (college for merchant navy officers), "Ecole d'aviation civile" (civil aviation) and the "Ecole Royale Militaire" (the Royal Military Academy).

School teachers in the lower secondary schools are State-certificated following two years of study at an intermediate teacher training college, whilst in the higher secondary schools the teachers are university graduates who are State-certificated following a one-year teacher training course.

Professional qualifications can be obtained through the long-term non-university education, e.g. qualifications for an industrial engineer, architect and commercial engineer. This type of training is divided into two cycles, the first part deals with the general theoretical or scientific training, and the second part is more vocationally focussed and requires the student to submit a personal thesis.

Some courses in economics in the long-term higher education scheme can be followed through attendance at evening classes, but the period of study is more extended.

Qualifications obtained in this way include:

- Industrial Engineer ("Ingenieur industriel, Industrieel Ingenieur")
- Licenciate Translater/ Interpreter ("Licencie-traducteur/ interprete, Licenciaat-vertaler/ tolk")
- Licentiate in Commercial Sciences ("Licencie en sciences commerciales, Licentiaat handelswetenschappen")
- Licentiate in Administrative Sciences ("Licencie en sciences administratives, Licentiaat bestuurwetenschappen")
- Commercial Engineer ("Ingenieur commercial, handelsingenieur")
- Architect ("Architecte, Architect").

Some courses in economics in the long-term higher education scheme can be followed through attendance at evening classes, but the period of study is more extended.

The first stage in university education leads to the qualification of "Candidat/Kandidaat", normally after two or three years of fairly general studies, and this is followed by a further two to three year study period, often involving the preparation of a thesis, leading to the "Licencie/ Licenciaat" qualification. In some subjects where this is recognised as a professional qualification (e.g. in engineering), the courses are a little longer. There is no stipulated period for the doctorate qualification, but the candidate must submit an original thesis and defend this in public to obtain the "doctorat/doctoraat".

The "Candidat/Kandidaat" in natural and medical sciences can be obtained after three years, but to become a doctor of medicine or of surgery requires at least a further four years of study including several periods of probation in a clinic and one year as a resident in a hospital. This qualification permits the doctor to enter the medical register in Belgium and set up in practise without further training.

The "Candidat/ Kandidaat" in law can be achieved in two years and the "Licencie/ Licenciaat" in a further three years.

There are two categories of degrees which can be obtained in Belgium, the state/legal degrees and the academic degrees. The state/legal degrees are required for certain professions or for holding certain posts in the professions, e.g. legal and teaching posts.

Denmark

After satisfactory completion of general upper secondary courses (at about age 18 to 20 years) students may proceed to training courses which are normally grouped according to duration, i.e.

- short further training courses ("KVU"), normally incorporating a substantial practical element, typically in technical subjects, or in finance and administration or in the social and health sphere;

- medium further training courses ("MVU");

- long further training courses ("LVU").

Typically, courses in the KVU-category are two years in duration, those in the MVU category are three to four years, and the LVU type are four to five years long.

For entry to courses of further or higher education the normal entry requirements would be the "Studentereksamen", an examination at the end of the upper secondary education consisting of written and oral tests arranged by the Ministry of Education, or the Higher Preparatory Examination ("HF, Hojere Forberedlseseksamen") intended for mature people who have been doing practical work for some years but who now seek further education. This examination is taken after a special course for mature students, where the entry requirements approximate to ten years of school education successfully completed.

Four years of study in the engineering colleges leads to the qualification of "Teknikum Ingenior". It is interesting to note that in addition to the normal entry requirements for entry to further education courses (i.e. the "Studentereksamen", HF or similar entry examination), the candidates are required to demonstrate that they have practical training, either as an apprentice or at a special course at a workshop training school.

The first year of the course is common to all students and then they may choose from specialisations including civil and construction technology, electrical, mechanical, or production engineering, or shipbuilding.

There are special courses for vocational teachers and for teachers at business schools. There is also extensive provision for updating and refresher training in a wide range of subjects. The Danish system for training at this level is rich and complex.

For higher education the normal entrance requirements are the "Studentereksamen" or HF. Students enjoy a degree of freedom concerning when they take their final examinations. In some faculties (e.g. science) there are detailed curricula laid down and these must be followed. The universities confer their own graduate and postgraduate degrees.

The most common first degree is the "Candidatus degree", and the title is normally abbreviated to "Cand." followed by the abbreviated Latin term for the subject, e.g. "cand. theol." for theology, "cand. jur." for law, "cand. polit" for economics, "cand. stat." for

statistices, "cand. act." for actuarial science, "cand. scient. soc." for social science, "cand. phil." for single subject humanities, "cand. mag." for two-subject humanities, "cand. psych." for psychology, "cand. scient." for science, and "cand. med." for medicine.

In the Faculty of Arts there are different types and levels of degrees, e.g. "cand. phil." for a single subject degree, "cand. mag." for a major plus minor subject, "mag. art." for an advanced degree in a single subject or group of subjects. The "Magister" degrees take from six to eight years.

The postgraduate degree of "Licentiate" is open to those who have attained the magister level provided that their projects are approved by the appropriate Faculty. The Licentiate degree is available in the following disciplines: theology, medicine, law, economics, sociology, arts, psychology and science.

Doctoral degrees are awarded only on the basis of a thesis presented by the candidate and requires several years of intensive and independent research. These degrees, which are only awarded to exceptionally gifted candidates, are conferred in the following fields: theology, social sciences, medicine, humanities, science or psychology. A degree level qualification (candidatus, magister or licentiate) is required before commencing research for the doctorate.

Universities do not usually have Faculties for pharmacy, dentistry, architecture or veterinary medicine, as these are studied in specialised colleges or universities.

Federal Republic of Germany

In principle, admission to courses of higher education is dependent on possessing the Certificate of General Qualifications ("Zeugnis der allgemeinen Hochschulreife") generally obtained after passing a final examination ("Arbiturpruefung) at a "Gymnasium" (grammar school) following 13 years at school.

Final examinations and certificates obtained at "Abendgymnasium" (evening grammar school) and "Kollegs" (college) correspond closely to this level. There are also some certificates which can be obtained e.g. at the "Fachhochschule", which give more restricted access to further or higher education.

The institutions of higher education in the Federal Republic (which can be roughly translated as universities, technical colleges, technical universities, education colleges,music colleges, arts colleges, comprehensive colleges, colleges of technology) are responsible for fostering and developing science and the arts through research, teaching and study as appropriate to the institution.

The universities, technical universities and technical colleges at university level (approximately at the level of a polytechnic in the UK), offer courses of study in a number of vocational areas, e.g. medicine, natural sciences, engineering, economics, law,social sciences which lead to state examinations ("Staatsexamen") or academic examinations ("Diplom", first degree, the "Magister", mastership degree, or "Promotion", the doctoral degree).

The state examinations are requirements for a limited number of professions, e.g. in the medical profession (doctors, veterinarians, dentists), teachers, lawyers, pharmacists and food chemists. These examinations are administered by state examination boards on which university professors have a place.

Universities are authorised by law to administer degree examinations, some of which qualify people to enter other professions, e.g .in engineering, natural sciences, economics and the social sciences.

The education colleges prepare people for teaching posts in the primary and secondary schools, and their courses lead to state examinations. In several of the Laender, education colleges no longer exist as all teachers there are trained at universities.

The art colleges or art academies train students in subjects such as architecture, sculpture, stage design, glassblowing and moulding, goldsmithing and jewellerymaking, graphic arts, commercial graphics, interior decoration and pottery.

The public music academies prepare their students for a variety of musical careers including instrumental music, vocal music, composition, conducting, and musicology. They also have courses in church music and courses for music teachers. There is a state music teacher's examination, a qualification which must be obtained by those who wish to teach music in schools or to become self-employed music teachers.

In some areas e.g. Baden Wuerttemberg the state music teacher's examination has been upgraded and replaced by a "Diplom" music teacher's examination. In some disciplines, e.g sound engineering and direction of musical theatre productions, students may take examinations that lead to a "Diplom".

In the comprehensive colleges, several of the disciplines mentioned above are brought together within one institution, thus this type of college performs the function of a university, a technical university, a teacher training college, a technology college and some of the functions of the arts academies.

There are also a few specialised colleges which restrict intake to people with particular qualifications, e.g. military colleges, civil service colleges.

Examination procedures will vary with the subject matter but would normally include oral as well as written tests and practical tests wherever these are relevant including art, music and sports as well as in the sciences and in technical subjects such as mechanical engineering, surveying, regional planning.

Studies in architecture, civil engineering, electrical engineering, mechanical engineering, regional planning, and surveying lead to the qualification of "Diplom-Ingenieur (Dipl.-Ing)", for business administration the "Diplom-Kaufmann", for education the "Diplom-Paedagoge (Dipl.-Paed.)", for psychology the "Diplom-Psychologe (Dipl.-Psych.)", for the sociologist the "Diplom-Soziologe, for the economist the "Diplom-Volkswirt" and so forth.

Medical practitioners are subject to the Federal medical Licensing Act and their course of study is in four parts, (1) two years of preclinical study followed by a preliminary examination, (2) one year of clinical study followed by a 'part one' examination in medicine, (3) two years of further clinical studies followed by a 'part two' examination in medicine, (4) 48 weeks of practical clinical training in a hospital followed by the final examination ('part three') in medicine.

Written multiple choice tests and oral examinations are used, and candidates successful at the part three examinations may submit an application for certification as a doctor of medicine to the chief health authority in the "Land". Once this certificate has been received the individual may use the professional title and practise.

Law is studied at the universities within the framework of the "German Law on Judges" which specifies the requirements of judicial office, including the minimum length of studies and the number of examinations to be taken. Studies may be undertaken via a traditional route involving full-time study followed by practical training route, or by an alternative system whereby academic and practical training are integrated.

The full-time (two-tier) route involves seven semesters of academic training leading to the first state examination, followed by two and a half years of in-service training leading to the second state examination. Generally speaking the students must pass written examinations to be admitted to the oral examinations, which they must also pass to be awarded their qualifications.

Greece

There are a number of technical colleges in Greece ("KATEs, Kentra Anoteras Technikis Ekpetheuseos") offering four-year courses to pupils who have completed upper academic or intermediate technical secondary education. The courses emphasize the practical application of knowledge and normally include a period of practical training and work experience, particularly when, for example, technician engineers or junior and middle managers are being trained. The KATEs are chartered and accredited under the California State Polytechnic University and run on American lines.

There are also some private colleges offering courses, mainly in engineering, and if these are officially recognised by the State, they may award certificates bearing the imprimatur of the State Ministry of Education.

There are a number of universities and also "graduate schools" at university level. Courses last a minimum of four years with five years in engineering, agriculture, veterinary medicine and dentistry, with six years for medicine. All courses at the National Technical/ Polytechnic University last five years.

Teacher training in Greece consists of a one-year course for holders of the lower secondary school certificate (to teach at the pre-primary level), a two year course at an education college for those who hold a secondary school certificate (to teach at a primary school) and university graduates may take a three-month course to obtain an equivalent qualification.

Over the past few years there has been a renaissance in higher education in Greece, as the change in the political situation has encouraged many able people to return to the country and to take up posts in the universities.

Spain

Second-level vocational studies provides more specialised education and training, and for those who have completed the first level, there is a two year course (or for some occupational areas, three years). This second-level training is also open to young people who have completed the three-year course of academic secondary education. This course leads to the intermediate technical qualification "Tecnico Especialista" covering business studies, technical and practical studies and supplementary studies.

Third-level vocational studies are part of the university system and applicants must have passed the second-level vocational studies stage or the preparatory course for university entrants. It leads to a qualification entitled "Tecnico Superior Diplomado".

The universities now incorporate the former higher technical colleges and the higher schools of music, art and drama. To be designated a university, an institution must have at least three faculties. University courses are divided into three cycles. The first cycle comprises three years of study in the basic disciplines, and entry to this cycle requires a Bachillerato or the individual must sit an entrance examination.

Students may proceed to the second cycle or they may leave and take a two-year third grade course at a Vocational Training Centre leading to a "Diplomado" qualification.

Those who continue into the second cycle of the university provides two years of specialised training leading to the "Licenciado" in most fields, but the "Titulo de Ingeniero" in engineering, or the "Titulo de Arquitecto" in architecture.

The third cycle (for those who hold the "Licenciado" or "Titulo de Ingeniero" or "Titulo de Arquitecto" degree) consists of a minimum of two years of further study and research to produce a thesis and to pass rigorous examinations for the degree of "Titulo de Doctorado".

There are also a number of Polytechnic Universities established from the former higher technical schools, vocational training schools, third grade schools, and university technical schools. Entrance requirements are similar to those of the normal universities, but the subjects have a more practical bias. As in the usual universities the first degree takes five years and the doctorates a minimum of a further two years.

France

The French higher education system is characterised by the co-existence of the "grandes ecoles" and the universities. These "grandes ecoles" are considered by many to be superior to the universities in their ability to prepare people for the highest positions in the public and private sectors in France.

Access to higher education is normally restricted to those who hold the baccalaureat, but alternative equivalent qualifications are acceptable and are on the increase. Furthermore, in recent years there have been major efforts to increase the quality of education and to increase the number of young people who achieve the baccalaureat qualification.

One way that has been used is to devise new qualifications based on more technical and vocational subjects at the baccalaureat level such that there is now both a technical and a vocational baccalaureat, both widely taught in France. Moreover, the emphasis on the alternance method of training means that these qualifications can be taken by routes involving alternating periods of on and off-the-job training.

Within the universities there has been a strong move towards more vocational courses at various levels, e.g. courses leading to the university diploma of technology (DUT), the master of science and techniques (MST) and the diploma of higher specialised studies (DESS) can now be taken in a variety of subjects.

The DUS equates roughly to a higher technician (baccalaureat plus two years of study), the MTS and DESS take four years beyond the baccalaureat, whereas the MTS is more geared for management and the DESS for subject specialists.

Universities provide academic courses for the professions, e.g. teacher, doctor or lawyer.

Ireland

Occupations which normally require higher education studies, but which may not require a degree level qualification include:

Aeronautical Engineer
Architectural Technician
Chartered Surveyor
Chemical Laboratory Assistant
Chiropodist
Civil Engineering Technician
Dietician
Dispensing Optician
Medical Laboratory Technician
National School Teacher
Ophthalmic Optician
Painter (Artist)
Physiotherapist
Radiographer
Quantity Surveyor
Science Technician
Sculptor
Valuation Surveyor

There are also a number of occupations where there is recognised training at a high level, but which do not fit into the normal educational patterns, for example:

Journalist
Company Secretary and Administrator
Assistant Meteorologist
Professional Photographer
Airline Pilot
Insurance Official
Life Insurance Representative
Minister of Religion
Veterinary Nurse
Speech Therapist
Actuary

The National Council for Educational Awards offers a wide range of vocational Diplomas and Certificates, and also degrees, and courses for these are offered at a wide range of technical colleges. Subjects covered include art and design, business studies, engineering and construction, science and paramedical subjects.

Most of the training for the professions in Ireland is supervised by State-recognised professional bodies, some of which receive financial support from the State. In general, these bodies set their own entrance and examination standards and act as registration bodies whose accreditation allows the legal practice of a profession. In most cases the professional recognition is dependent on a university level course of study combined with a period of supervised practical experience and training on the job.

Some of the principal professions recognised in Ireland and the relevant accrediting institutions are:

Medical Doctors	The Medical Council
Dentists	The Dental Board
Veterinery Surgeons	Royal College of Veterinary Surgeons in Ireland
Pharmacists	Pharmaceutical Society of Ireland
Engineers	Institution of Engineers in Ireland
Lawyers	Incorporated Law Society
	Honourable Society of Kings Inn
Accountants	Association of Certified Accountants
	Institute of Certified Public Accountants in Ireland
	Institute of Chartered Accountants in Ireland
	Institute of Costs and Management Accountants
	Institute of Management Accountants
Architects	Royal Institute of Architects in Ireland

Other occupations for which a university level qualification is normally required include:

Social Worker for the Blind
Agricultural Engineer
Chemist
Agricultural Development Officer
Adviser in Horticulture and Bee-Keeping
Biologist
Dietician
Food Scientist
Aeronautical Engineer
Psychologist
Industrial Inspector
Geologist
National School Teacher
Civil Engineer
Economist
Vocational School Teacher
Probation and Welfare Officer
Microbiologist

Italy

Italy has a rich variety of technical and art colleges, many of which are specialised. The curriculum is based on the study of subjects which vary from one college to the next, according to the degree of specialisation and this also influences the award offered. There are also a large number of universities which offer vocationally oriented subjects.

Subjects to be studies at the State colleges, universities and the academies of fine arts are set by the State legislation. Private institutions are obliged to conform to the same legislation in order to obtain legal recognition for the qualifications issued.

At universities the programme for each subject which is part of a degree course is set by the professors of each subject. Postgraduate university courses are devised by the academic authorities but must be approved by the Ministry of Education.

All professional people are required to have a formal qualification before they can practise. Membership of the relevant professional association (the "Albo Professionale") is compulsory for most professions. Examples of these professional associations, "ordini professionali", "consigli" or "collegi" include:

- "Agenti di Cambio" stockbrokers,
- "Attuari", actuaries,
- "Avvocati e Procuratiori",barristers and solicitors,
- "Consulenti del Lavoro", labour consultants,
- "Dottori Agronomi e Dottori Forestali, agriculture and forestry experts,
- "Dottori Commercialisti", commercial experts,
- "Farmisti", pharmacists,
- "Geometri", surveyors,
- "Giornalisti", journalists,
- "Ingegneri", engineers,
- "Medici Chirughi", surgeons,
- "Notari", notaries,
- "Ostetriche", obstetricians,
- "Periti Agrari", agriculturalists,
- "Periti Industriali", industrialists,
- "Ragionieri e Periti Commerciali", accountants,
- "Revisori Ufficiali dei Conti", auditors,
- "Tecnici di Radiologia", radiologists,
- "Veterinari", veterinary surgeons.

The final qualification awarded by the technical colleges ("Istituti Tecnini") is called the "Diploma di Maturita Tecnica" and this is fully recognised for the purpose of employment in industry and in the public sector. It also enables the holder to enrol at an Italian University in any Faculty.

Technical colleges offering five-year courses, established in Italy include:

- "Istituto Tecnico Agrario" for agriculture and farming with provisions for specialisation in viticulture, oenology, horticulture, animal husbandry, dairying and so forth. Qualification: "Maturita Tecnica: Diploma di Perito Agrario".

- "Istituto Tecnico Commerciale per Ragionieri e Periti Commerciali" - for commerce, accountancy and business techniques, with some Institutes offering specialisation in foreign trade. Qualification: "Maturita Tecnica: Diploma di Ragioniere e Perito Commerciale".

- "Istituto Tecnico per Periti Aziendali e Corrispondenti di Lingue Estere" - for business subjects and including at least two foreign languages, economics and law. Qualification: "Maturita Tecnica: Diploma di Periti Aziendali e Corrispondenti di Lingue Estere".

- "Istituto Tecnico per il Turismo" - for travel and tourism. Qualification: "Maturita Tecnica: Diploma di Perito per il Turismo".

- "Istituto Tecnico per Geometri" for surveying, including building and construction subjects in the curriculum. Qualification: "Maturita Tecnica: Diploma di Geometra"

- "Istituto Tecnico Industriale" for industrial subjects including photography, graphic arts, chemical dyeing, industrial chemistry, aeronautic construction, chronometry, fabric design, construction, industrial electronics, electronics, nuclear energy, food industries, metal-mechanical industries, mining industry, naval mechanics, optical industry, textile industry, wool industry, plastics, mechanics, precision mechanics, metallurgy, telecommunications. Qualification: "Maturita Tecnica: Diploma di Perito Industriale" in the specialist section.

- "Istituto Tecnico Aeronautico" for aeronautics, including navigation. Qualification: "Maturita Tecnica: Diploma di maturita tecnica areonautica", mentioning the specialist field studied.

- "Istituto Tecnico Nautico" for marine subjects, including ship building, and training naval officers and technicians for the merchant navy. Qualification: "Diploma ti Maturita Tecnica Nautica" mentioning the specialism studied (e.g. "Capitano di Lungo Corso", "Diretto di Macchina", "Ufficiale Radiotelegrafista" or "Costruttore Navale".

- "Istituto Tecnico Femminale" - for dietetics, social work, home economics. Qualification: "Maturita Tecnica Femminale" depends on course taken, e.g. "Diploma di ablilitazione professionale delle attivita tecniche Femminili" or "Economa dietista" or "Dirigente di Comunita".

There are a variety of colleges specialising in artistic subjects including drama, dance and commercial art. In addition to the basic three-year courses (mentioned in the section on skilled workers and masters), the Istituti d'Arte (art colleges) offer a further two-year course, the "Biennio Sperimentale post-qualifica" which leads to a "Diploma di Maturita di Arte Applicata" for successful candidates.

Luxembourg

Vocational education for technicians is provided within the secondary school system at the "lycees techniques". The Ministry of National Education is responsible for the recognition of the vocational qualifications and diplomas and for the supervision of the vocational training.

There are also technical courses at secondary level in the following areas:

- arts, crafts and industrial training, with sections for building, mechanics, machine tools, electrotechnology, chemistry,
- administration and commerce
- fine arts
- hotel and catering, with sections for hotel work, cookery and service
- agriculture
- ancillary medical and social studies, with sections for ancillary medical workers and special education instructors.

At the end of the intermediate stage students must decide whether to enter the upper stage of the secondary education (for technician level studies), or to study for a further year to sit for the CATP examinations and practical tests.

The upper secondary level studies comprise two years of study within one of three areas:

- administration and commerce, with sections for management and secretarial studies
- general technical education
- technician training, with sections for agriculture, fine arts, chemistry, electro-technology, mechanics, hotel and catering.

These studies lead to national examinations and successful candidates in administration and commerce or in the general technical education are awarded the "diplome de fin d'etudes secondaires techniques" (technical secondary final diploma) specifying the course followed and the subjects tested, and stating that the holder might attend higher technical or university studies in his special subject.

Candidates who successfully pass examinations and tests in the technician training are awarded the diploma of Technician, stating the course and subject tested.

Those who wish to follow on with further technical training can apply to enter the Institut superior de technologie (IST). To enrol as a student candidates require a secondary or a technical secondary leaving certificate or an equivalent foreign qualification.

Those who successfully complete the three-year course are awarded the Diplome d'ingenieur technicien. With this qualification students can apply for admission to the second cycle of studies at selected universities in Belgium, France, Germany and Austria.

Tuition at the IST is in German and in French and students must be fluent in both languages.

Vocational qualifications are legally required in most of the craft areas and related areas.

Standards for qualifications at professional level are drawn up by the Ministry of national education in collaboration with appropriate bodies, e.g. the "Ordre des Experts-Comptables" (accountancy), the "Ministere de la Justice" (law), the "Ordre des Architectes" (architecture).

Legally recognised professional qualifications are required for most of the professions, e.g. teacher, lawyer, doctor, architect, engineer, economic adviser, and for a career as a senior civil servant.

Luxembourg does not have a full system of university education conferring final degrees. The country has a "University Centre" which offers courses for the first year of university study only.

Thus students then go abroad to complete their university studies. On their return to Luxembourg the student may apply to have the foreign degree or diploma officially approved (homologation) in relation to qualifications in the field of law, medicine, dentistry, pharmacy and veterinary medicine, and for qualifications that lead to a career as an arts or science teacher in secondary education.

Alternatively, the student may, on returning with a foreign degree or diploma, ask for this to be entered in the register of diplomas of higher education. This register covers all diplomas not governed by the "homologation" system.

There is a special Commission which is called upon to give an opinion on the foreign certificates and diplomas, but the final decision concerning recognition rests with the Minister of Education (e.g. for qualifications such as engineer, architect, psychologist, economist).

Netherlands

In the 1986 Higher Vocation Education Act, higher vocational education (HBO) is defined as "building on the higher forms of secondary education, comprises theoretical and practical preparation for those occupations and professions for which higher vocational education is essential or useful'.

Higher vocational education is divided into a number of sectors in which students can be prepared for occupations, e.g. broadly concerned with agriculture and horticulture, business and financial affairs, health care, art, teaching, social welfare, science and technology. There are a number of related fields of study in each sector and one or more of these fields may be available at any particular higher education college. There were over 300 such colleges, often offering a restricted range of occupational training, but these are being reorganised into about 50 new institutions which will each cover a range of occupations and vocational areas.

Education in the arts is provided at the higher level and includes the visual arts, music, drama and architecture. Anyone who is creative and has a HAVO or equivalent may be accepted as a student at a visual arts college. The courses generally last five years and offer a variety of specialised subjects. The term visual arts college includes colleges of industrial design, the training college for museum and art gallery staff, and the film and television college.

Academies of music also require the HAVO certificate for admission plus an adequate standard of musical ability and instrumental or vocal competence. Courses last from five to six years and can lead to a performing musician's qualification (instrumental or vocal), a teaching qualification (instrumental or vocal) or a practical diploma or certificate in any one of a variety of specialised subjects. Musical training is also provided at music teacher training colleges.

Drama education offers dance, mime, drama and cabaret training for performing artists and for teachers. The admission requirements are the HAVO certificate and adequate talent and ability. The courses last from four to six years, depending on the students.

Architecture colleges offer training beyond the HTS leading to a diploma in architecture.

There are two types of university level institutions in the Netherlands, the "universiteit" (which must have at least three faculties, including medicine or mathematics and natural sciences), or the "hogeschool". There are state, municipal and private universities, and the technological universities or "hogeschools". There are also theological colleges recognised by the Government. University education is designated WO.

A VWO certificate is required for entry to the university level courses which are generally split into three parts, the "propadeutisch" first year course, the "kandidaats" part, normally one to two years, and the final "doctoraal" part which lasts two to three years. Holders of the "doctoraal" certificates are entitled to the designation "doctorandus" (drs.), or it they have qualified in law, to the designation "meester" (mr.). Thereafter they may seek the doctorate (and the title dr.) by thesis.

Graduates of the universities of technology are entitled to the designation "inginieur", at this level abbreviated to ir. In some subjects, graduates may proceed through post-graduate study, to become qualified in professions where the "doctoraal" certificate is not sufficient, e.g. as doctors, chemists, dentists or veterinary surgeons.

Portugal

Education and training in a variety of vocational subjects is provided in further education colleges known as the "institutos superiores de engenharia" or "institutos superiores de contabilidad e administrato". These institutions can offer courses at the "bacharei", "licenciatura" or "doutorado" level.

Higher education for the professions (e.g. agriculture, architecture, engineering, medicine, pharmacy, veterinary medicine) is provided by the universities and a number of public and private institutions. In most institutions the first qualification awarded, normally after a five-year course, is the "licenciatura". In some subjects (engineering, agriculture, veterinary medicine and medicine) a year of practical training is also required before the "licenciatura" is awarded. Mostly holders are called 'doctor' by tradition and use the designatory letters dr.

The format of the studies varies from subject to subject. In some subjects the first qualification awarded is a "diploma", e.g. in architecture the diploma is awarded after six years of study and one year of practical training, whereas in science subjects a diploma is awarded one year after the "licenciatura".

In pharmacy a three-year course leads to a diploma, followed by a further two years for the "licenciatura". In agriculture and veterinary medicine the diploma is awarded after an additional year of study following the normal five-year course.

The "doutoramento" is a postgradulate qualification, generally obtained on a part-time basis by people who are in employment. Candidates for the "doutoramento" must prepare and submit a thesis and this usually takes at least three years. Those who are successful can use the full title of doctor.

United Kingdom

Technician level qualifications in a wide range of subjects are the responsibility of the Business and Technician Education Council (B/TEC) in England and Wales, and the Scottish Vocational Educational Council (SCOTVEC) in Scotland.

In addition to the National Certificates and Diplomas offered by these bodies there are a wide range of qualifications, at both the technician and the professional level, which are supervised and granted by scores of independent professional bodies covering occupations as diverse as accountancy (the Institute of Chartered Accountants), medical herbalists (the Institute of Medical Herbalists) and welfare officers (the Institute of Welfare Officers).

Many of these qualifications can be taken by full-time or part-time courses or by what are known as "sandwich" courses where extended periods of on-the-job experience and training (e.g. for six months to a year) are interspersed with formal education and training at a technical college, polytechnic or university in England, Wales and Northern Ireland. In Scotland the "Central Institutions" provide training at this level, as well as the universities.

Most professional level qualifications (as recognised by the requisite professional body) require study to at least a university first degree level, followed by (or interspersed with) on-the-job professional training and experience. In many cases the professional body will require one or more of its senior members to sponsor applicants for admission and also seek evidence that the individual is capable of following the profession in practical terms before admission to "corporate" membership, which confers designatory letters and professional status.

For admission to technician level, professional level, and university first degree courses, individuals would normally require satisfactory grades in two or three subjects at the advanced level of the General Certificate of Education (normally taken at about 18 years of age). The subjects required and the grades necessary vary from subject to subject and from one institution to another.

In the United Kingdom few professions are regulated by the State. Many of the professions are regulated indirectly by the granting of a charter to a professional body responsible for setting entry requirements and maintaining professional standards.

There is a measure of control of activities in certain professions, e.g lawyers, medical practitioners, pharmacists, nurses and midwives, chiropodists, dieticians, occupational therapists, physiotherapists, radiographers, medical laboratory technicians, remedial gymnasts, architects, accounting and auditing services, insolvency services, dental services, opthalmic services, veterinary services, patent agents' services, and in surveying.

Problems and Concerns

On the continent of Europe mobility from one country to another is commonplace, and this mobility is likely to have an impact on the Republic of Ireland and the United Kingdom in due course. Many European countries on the continent insist that one or two foreign languages are studied in their business courses at the technician and at the professional level as trade between countries forms a large part of their work.

The increase in international trade within the European Community will be accompanied by people offering professional and business services across borders, increasing the need for recognition of competence across national boundaries. These developments are having their effect on virtually every sector of industry, commerce and the public sector in every country.

These factors expose weaknesses in the standards of education and training of the workforce and many government departments are now taking steps to remedy past shortcomings and improve both the quality, quantity and relevance of vocational training at all levels. In virtually every Member State efforts are being made to involve employers fully in the vocational training activities.

The activities of the Commission of the European Community, CEDEFOP and also of the European Employers' Federation (UNICE) and the European Federation of Trade Unions (CES) are making people more aware of the importance of sound basic training plus ongoing training to enable individuals to develop their talents and to cope with changes in technology, trade and working methods.

There can be no doubt that a method whereby an employer in one country can recognise the meaning and worth of a vocational qualification obtained by an individual in another European country would be of value both to the employer and the individual concerned. Furthermore an individual who has achieved professional status in his or her own country should be entitled to practice this profession, on reasonable terms, in another.

Opening up the market in Europe could lead to problems for countries whose education and vocational training systems are weak, and many Member States have recognised this.

Thus the problem faced by the Commission of the European Community is twofold. Firstly methods are needed to accelerate progress towards the recognition of qualifications as an aid to mobility of labour, business people and professionals, and secondly, measures are needed which will encourage and assist Member States as they seek to upgrade their vocational education and training systems.

Officials at the Commission of the European Communities are anxious to achieve real progress by 1992, which means that action must be taken in 1989 to secure the necessary legal instruments, e.g. a Directive on the recognition of vocational qualifications at sub-professional levels.

Current Initiatives

The Comparative Studies project referred to above is being vigorously conducted by CEDEFOP in Berlin, bringing together experts from various countries to draw up descriptions of the occupations in their sectors, and then to describe and to compare these and the training given in each case. This work is being undertaken with thoroughness and care, but the process may prove too slow to satisfy the political aspirations associated with 1992, and very real difficulties have arisen in practice as the scope has moved to more complex occupational areas.

The notion of an Observatory, first suggested by ISFOL, Italy, has been studied by CEREQ, Paris, France at the request of DG-V. The idea is clearly still on the table and has attractions if the bureaucracy can be kept to a minimum. In essence the proposal appears to involve the production of a database where each qualification is described in a prescribed format.

The database could be in one place, or be stored in parts (one for each Member State?) linked together electronically. The technology exists, but first there would need to be agreement on the pro-forma, the database, and the expenditure incurred in such a development. The priority to be accorded to this project is uncertain at the time of writing.

One of the problems of an Observatory will be how detailed it should be, and whether it should list every qualification. There are hundreds of qualifications in many countries and more are being devised and approved. Such a database would need to be regularly updated. Furthermore, if such a database is to be of help to older people, would it need to include all the qualifications issued over past years?

Presumably the organisation responsible for the national observatory in each country would be responsible for updating the entries and informing the Commission and the other partners about significant developments in vocational qualifications and the needs for occupational training.

The potential advantages of an Observatory could be (a) underpinning the individuals ability to migrate, (b) providing employers with an understanding of the value of qualifications and also information about the way the labour market is developing in terms of the skills needed in the future, (c) providing information which could stimulate the exchange of ideas and expertise in training and assessment - facilitating the transfer of training technology and social cohesion.

Experts at CEDEFOP are currently working on a Directory of Occupational Profiles, where occupations are grouped according to function and described on a pro-forma setting out the knowledge, skills and aptitudes required to follow the occupation. This system could be developed so that an occupational qualification could be related to a particular occupational profile.

Officials in Brussels are also working on an initiative called Eurotechnet, a programme which supports innovative projects to improve the level of training when new technology is introduced. This will clearly have implications for vocational qualifications.

The idea of a Vocational Training Passport or logbook is also still being considered and discussed. There are likely to be serious objections from some Member States to a hardback book recording an individual's training experiences, but the notion of a loose-leaf book (not unlike the NROVA National Record of Vocational Achievement produced by the United Kingdom's National Council for Vocational Qualifications) would appear to be a very real possibility.

There is some interest in the future requirements for vocational requirements and to date studies have focussed mainly on the information technology side. The Commission is interested in what qualifications will be needed in the future and what Member States are doing to deal with these developments.

The decision of the Council in December to confirm the Directive on the recognition of higher-education diplomas means that Directorate-General III of the Commission of the European Communities (DG-III) will be seeking to ensure that this is effective. The hope is that an international co-ordinating group will be established quickly to discuss how this will work in practice. (A group composed of national co-ordinators is envisaged in the Directive, but this will not come into effect straight away.)

It appears that in every Member State other than the United Kingdom and the Republic of Ireland the main professions are, directly or indirectly, controlled by law.

Current Priorities

The creation of a "Task Force for Human Resources, Education, Training and Youth" under Hywel Jones, reporting directly to the Commissioner, Ms Vasso Papandreou, markedly increases the pressure for action originally fuelled by the Jacques Delors 1992 thrust.

The first priority of the Task Force is to work out a way of promoting the recognition of qualifications through a legal instrument, i.e. a Directive. Alongside this there is a desire to promote the concept of credits in vocational qualifications.

The proposed Directive will, hopefully, cover all qualifications below those covered by the "recognition of higher diplomas" Directive passed last December. The aim is to secure a Directive by the end of 1989.

If this is to succeed, the basic proposal will need to be essentially simple, without the need for excessive bureaucracy or high cost, and must build in a high degree of consumer protection, i.e. for the person with the qualification. It will need to take into account the language problem in understanding the value of certificates. It must be adaptive and have a high profile so that its provisions will be used. The Erasmus project has proved to be a useful model - developing credit transfer between Universities.

A second priority for the Task Force will be to develop a coherent strategy for continuing training, improving the return on training activities and at the same time maintaining and fostering sound industrial relations as the market becomes more and more competitive.

APPENDIX 1 - COMMUNITY LAW

The following notes provide a brief account of some of the main legal documents (Treaties, Decisions, Directives, Resolutions etc.) which together form the legal basis for action at the European Community level in the field of vocational training.

Pressure for work on vocational qualifications by the Commission of the European Communities arises directly from the Treaty of Rome itself (1957), and this was reinforced by the Single European Act which came into force in July 1987.

It is important to remember that there are three "Community" Treaties, i.e. relating to the European Coal and Steel Community, the European Economic Community, and European Atomic Energy Community, sometimes known as Euratom. That is why we refer to the Commission of the European Communities (CEC) in Brussels, commonly misquoted as the EEC, and to the European Community (EC) rather than the EEC.

There are three separate aspects to vocational qualifications within the context of these treaties, i.e. freedom of movement for employed people (EEC Article 48), freedom to conduct business and to operate as self-employed persons (EEC Articles 52-58 refers to 'Freedom of Establishment' and EEC Article 57), and the freedom to provide services for remuneration including activities of an industrial or commercial character, craftsmen or the professions (EEC Articles 59-66).

Article 57 specifically calls for "Directives for the mutual recognition of diplomas, certificates and other evidence of formal qualifications in order to make it easier for persons to take up and pursue activities as self-employed persons".

There are also Articles in the Treaty of Rome concerning cooperation between the member States in the social field, including matters relating to employment, labour law and working conditions, and to basic and advanced vocational training (EEC Article 118), and concerning the European Social Fund and its role in improving employment opportunities for workers, and increasing their geographical and occupational mobility within the Community (EEC Article 123).

EEC Article 128 required the Council, acting on a proposal from the Commission and having consulted the Economic and Social Committee, to lay down general principles for implementing a common vocational training policy capable of contributing to the harmonious development both of the national economies and of the common market. This resulted in a document containing "Ten Principles" which are often referred to as a basic mandate for Community action. This document is the "General Principles for Implementing a Common Vocational Training Policy", Council Decision 1963, see OJ 1963 pp 250-253.

Action regarding the free movement of workers is dealt with by Directorate-General V of the Commission of the European Communities. This Directorate-General is responsible for employment and social affairs, education and training.

Action concerning the freedom of establishment and the freedom to provide services is normally dealt with by Directorate-General III of the Commission of the European Communities, which is responsible for trade and industry.

Selected Key Documents

The main documents are the Treaties establishing the European Communities, see the abridged edition, 1987 (ISBN 92-825-7657-4), which contains the texts in general use covering the Single European Act, SEA, which came into force on 1 July 1987 and amended the three Treaties which established the European Communities (European Coal and Steel Community, ECSC, European Economic Community, EEC, and European Atomic Energy Community, EAEC).

The relevant sections include:

EEC Article 48 - Freedom of movement of workers

EEC Articles 52-58 - Freedom of Establishment including the right to take up and pursue activities as self-employed persons and to set up and manage undertakings.

EEC Article 57 - Council, on a proposal from the Commission and in cooperation with the European Parliament, shall issue Directive for the mutual recognition of diplomas, certificates and other evidence of formal qualifications in order to make it easier for persons to take up and pursue activities as self-employed persons.

EEC Articles 59-66 Freedom to Provide Services for remuneration including activities of an industrial or commercial character, craftsmen or the professions.

EEC Article 118 Promotion, by the Commission, of Cooperation between the member States in the social field, particularly in matters relating to employment, labour law and working conditions, basic and advanced vocational training, social security, prevention of occupational accidents and diseases, occupational hygiene and the right of association and collective bargaining between employers and workers.

EEC Article 123 - European Social Fund to improve employment opportunities for workers, to contribute thereby to raising the standard of living, to render the employment of workers easier and increasing their geographical and occupational mobility within the Community.

EEC Article 128 - Council, acting on a proposal from the Commission and having consulted the Economic and Social Committee, shall lay down general principles for implementing a common vocational training policy capable of contributing to the harmonious development both of the national economies and of the common market.

General Principles for Implementing a Common Vocational Training Policy, Council Decision 1963, see OJ 1963 pp 250-253 (commonly referred to as the "Ten Principles", Ref: 63/266/EEC.

A Commission proposal concerning "General Guidelines for the Development of the Programme for Vocational Training" was accepted by the Council on 26 July 1971.

Council Resolution of 6 June 1974 on the mutual recognition of diplomas, certificates and other evidence of formal qualifications, requires lists to be drawn up OJ No C 98, 20.8.1974, p.1.

Council Resolution of 9 February 1976 on an action programme in the field of education and information on the recognition of diplomas for professional purposes, OJ C 38, 19.2.1976

Council Resolution of 13 December 1976 concerning measures to be taken to improve the preparation of young people for work and to facilitate their transition from education to working life.

Council Resolution on 18 December 1979 on linked work and training for young persons, OJ 3.1.80 C1/1 and C1/2.

Council Resolution 27 May 1982 on Community action to combat unemployment, according priority to vocational training for young people OJ No c 186, 21.7.1982, p.1.

Council Resolution 2 June 1983 concerning vocational training measures related to the information technologies OJ No C 166, 25.6.1983, p.1.

Council Resolution 11 July 1983 concerning vocational training policies in the European Community in the 1980s OJ No C 193, 20.7.83, pp. 2-5.

Council Decision of 16 July 1985 on the comparability of vocational training qualifications between the Member States of the European Community, Ref: 85/368/EEC calls for better information via features of job descriptions mutually agreed by the Member States, and appropriate action by the Commission.

A proposal for a Council Directive on "A general System for the recognition of higher education diplomas" was prepared by the Commission on 9 July 1985 and published in the Bulletin of the European Communities, Supplement 8/85.

Common position adopted by the Council of 30 June 1988 with a view to the adoption of the Council Directive on a General System for the recognition of Higher-Education Diplomas awarded on completion of professional education and training of at least three years' duration, Brussels, 7 July 1988, 7533/88

Council Directive of 21 December 1988 on a general system for the recognition of higher-education diplomas awarded on completion of professional education and training of at least three years' duration.

APPENDIX 2 - EDUCATIONAL STATISTICS

Apart from a few exceptions the statistics refer to full-time education in the ordinary school and university systems defined in the Unesco International Standard Classification of Education (ISCED). The system in question thus consists of a 'ladder' up which children and adolescents can progress from pre-school to university level. The pupils for whom it is intended start as a rule around the age of about 4 and it is not unusual for some of them to continue until around the age of 25 or over.

The statistics therefore do not cover any type of out-of-school education: thus neither the new types of education such as television or correspondence courses nor the whole of the adult education sector, for example, are included.

The numbers recorded correspond to the pupils and students enrolled at public and private-sector establishments incorporated in the school and university system.

The geographical area chosen is based on the "internal" criterion, and only the numbers enrolled at establishments situated within the national territory are taken into consideration. The numbers at the European Schools are thus counted at the place of their establishment. France is taken to mean metropolitan France, i.e. excluding overseas departments and territories (DOM-TOM).

The figures for Luxembourg cover only education within the country. As there is no conventional university in Luxembourg most third-level students study abroad. In 1970/71 there were 1461 (including 430 women); in 1982/83 there were 2386 (including 870 women).

Generally speaking, the definitions and classifications used in the collection and presentation of the data are those drawn up by Unesco in the ISCED.

The various types of national education have been broken down according to the levels defined in the ISCED, which are now used in all the Member States of the Community:

(i) Pre- school (ISCED 0). Education prior to the beginning of compulsory schooling. As a rule it begins around the age of three or four and in most cases finishes around the age of six.

(ii) First level (ISCED 1). Elementary education, compulsory in all cases and lasting five years as a rule.

(iii) Second level, 1st stage (ISCED 2). Lasts three years in the majority of cases and is also compulsory.

(iv) Second level, 2nd stage (ISCED 3). Begins around the age of 14 or 15, lasts for three years in the majority of cases and leads to the standard required for admission to university or any other form of higher education. Depending on the country, it may begin at the end of compulsory schooling or still be a part thereof.

(v) Third level (ISCED 5, 6, 7). Comprises universities and all other types of higher education.

Ages of Compulsory Schooling

In recent years a number of Community countries have extended the age range of compulsory schooling, either by a straightforward extension at the upper end or by making some form of vocational education or training obligatory for those students who do not remain in general education beyond the normal upper age limit. The situation is also affected by the relationship between a child's birthday and the dates of the beginning and end of the school year. National laws governing compulsory schooling vary widely on this point. Furthermore, in some countries the laws specify a minimum number of years of schooling that have to be completed as well as, or instead of, simple lower and upper age limits. For these reasons the legal position is too complex to be described in a concise form; the following age ranges may, however, be taken as a guide to compulsory schooling in the Member States:

FR of Germany	6 to 15/16 years (1)
France	6 to 16 years
Italy	6 to 14 years
Netherlands	5 to 15 years (2)
Belgium	6 to 18 years (3)
Luxembourg	6 to 15 years
United Kingdom	5 to 16 years
Ireland	6 to 15 years
Denmark	7 to 16 years (4)
Greece	6 to 15 years

(1) With compulsory part-time vocational schooling to age 18 for those not full-time in school.

(2) Followed by 2 years compulsory part-time schooling for those not full-time in school.

(3) Of which the last two years may take the form of part-time training.

(4) With a minimum of 10 years full-time schooling.

Number of pupils and students by level of education

The figures in this table refer to the numbers of pupils and students enrolled in full-time education at the various levels for the school year concerned. The precise date at which the enrolment is counted is not standardized but is generally a date in the Autumn term.

Third level students by field of study

This table gives a breakdown of students enrolled at 3rd-level establishments during the reference years by re-grouping the courses of studies given in the ISCED according to the following scheme:

Humanities	-	Humanities (522, 622, 722)
	-	Religion and theology (526, 626, 726)
	-	Educational sciences and teacher training
	-	Educational sciences and teacher training (514, 614, 714)
Fine arts	-	Fine and applied arts (518, 618, 718)
	-	Architecture and town planning (558, 658, 758)
Law	-	Law (538, 638, 738)
Social sciences	-	Social and behavioural sciences (530, 630, 730)
	-	Commerce and business management (534, 634, 734)
	-	Domestic sciences (566, 666, 766)
	-	Tertiary sector administration (578)
	-	Information and documentation studies (583, 684, 784)
Natural and physical sciences	-	Natural and physical sciences (542, 642, 742)
	-	Mathematics and data processing (546, 646, 746)
Engineering sciences	-	Industrial production and allied studies (552)
	-	Engineering sciences (554, 654, 754)
	-	Transport and telecommunications studies (570)
Medical sciences	-	Medical sciences (550, 650, 750)
Agriculture, forestry, halieutics	-	Agriculture, forestry, halieutics (562, 662, 762)
Others	-	Others (589, 689, 789)

In addition, distinction is made between students following courses at ISCED Level 5 (3rd level, Stage 1, leading to a diploma not regarded as equivalent to a first university degree) and ISCED Levels 6 and 7 (6 = 3rd level, Stage 1, leading to a first university degree or an equivalent qualification and 7 = 3rd level, Stage 2, leading to a higher university degree or an equivalent qualification).

Note that there are some minor discrepancies between the totals in this table and the table above, due to students being missed or registered for more than one course of study.

EDUCATION AND TRAINING

Number of pupils and students by level of education (in thousands)
(Base Year 1982/3 except Greece 1981/2)
Boys and Girls

	Germany	France	Italy	Nether-lands	Belgium	Luxem-bourg	United Kingdom	Ireland	Denmark	Greece
Pre-primary	1587	2408	1757	401,8	389,8	7,9	3231	43,0	61,5	153,8
1st level	2530	4572	4215	1270,9	812,1	25,1	4522	431,8	431,9	892,8
2nd level -										
1st stage	5151	3349	2850	1032,7	582,2	15,1	2671	205,3	276,9	453,0
2nd stage	1393	2040	2502	440,0	266,2	10,5	2713	111,6	218,8	301,1
3rd level	1392	1174	1030	297,3	206,5	0,9	568	47,7	110,9	124,7
Third level students by field of study										
Humanities	189,5	273,2	150,7	28,9	9,0	0,5	48,2	9,4	15,8	13,0
Teaching	93,1	45,9	52,6	34,1	25,2	0,1	74,3	5,2	22,4	7,1
Fine arts	83,4	23,2	71,6	12,1	4,6	0,1	77,5	4,0	5,8	1,2
Law	82,0	139,4	149,0	23,4	6,7	0,2	1,0	4,0	12,8	
Social science	302,9	104,1	190,1	98,9	33,4	0,6	224,2	13,8	18,0	32,0
Natural science	154,4	137,3	107,4	49,0	13,7	0,2	123,9	10,0	7,0	13,1
Engineering	215,2	38,4	89,9	18,9	21,7	0,6	157,7	12,9	13,0	23,0
Medicine	202,4	186,1	239,7	18,3	28,8	0,7	54,0	4,0	18,0	14,2
Agricriculture#	41,5	13,1	39,5	12,2	2,3	0,0	9,0	1,1	2,6	5,2
Other	27,6	207,2	0,2	-	14,5	0,2	32,3	2,7	4,1	2,7
Total	1392,0	1167,9	1090,7	295,9	159,9	3,3	801,0	64,2	110,7	125,1

* Includes part-time students.
+ Includes Luxembourgish students abroad.
# Agriculture, forestry, and fishery

APPENDIX 3 - DOCUMENTS

Vocational Training in Belgium
CEDEFOP, Berlin 1985
Dr Pol-Jean Debaty
ISBN 92-825-6968-3

Les etudes universitaires et superieures au Luxembourg et a l'etranger
Ministere de l'Education Nationale et de la jeunesse - September 1987
Ministry of Education, Luxembourg

Education in the Grand Duchy of Luxembourg
Unite Nationale d'eurydice Ministere de l'Education Nationale et de la Jeunesse 1987

La formation professionnelle en Belgique
CEDEFOP, Berlin 1985
Dr Pol Debaty Conseiller technique
ISBN 92-825-6969-1

Studien-und Berufswahl 1988/89
1988/89
Karl Heinrich Bock
ISBN 3-87066-152-6

National Institute of Economic & Social Research
Discussion Papers No 60/Industry Series No 14
Revised Draft June 1983-Schooling standards in Britain & Germany
S J Prais and Karin Wagner - Discussion Paper No 60 (Industry Series No 14)

The Dual System of Vocational Education in the Federal Republic of Germany - Principles and Experience
Ministry of Education and Science, West Germany
Jurgen W Mollemann - Federal Minister of Education and Science

Vocational Training in the Federal Republic of Germany
CEDEFOP, Berlin 1982 in particular Vocational and Labour Pedagogics
Prof Dr Joachim Munch, Chair of Pedagogica
ISBN 92-825-4347-1

The Educational System in the Federal Republic of Germany - Governance Structures Courses
Foreign Office of the Federal Republic of Germany
Gerdi Jonen, Horst Roche
ISBN 3-87192-172-6

Vocational Training in Denmark
CEDEFOP Berlin 1986
Werner Rasmussen
ISBN 92-825-7721-X

Vocational Training in Greece
CEDEFOP Berlin 1985
Stavros Stavrou
ISBN 92-825-6585-8

La formation professionnelle en France
CEDEFOP Berlin, 1987
Andre Voisin Charge de mission
ISBN 92-825-8251-5

La Formation Professionnelle a l'etranger
Quels Enseignements pour la France? Volume 1
Commissariat General du Plan, Paris, juillet 1987
Jean-Pierre Jallade-Institut European d'Education et de Politique Sociale
Convention d'etude No 32/1986

Un Apercu du systeme Educatif Francais
Les Dossiers de Sevres Collection: Vie Scolaire
Centre International d'Etudes Pedagogiques de Sevres
ISSN: 0769-5683

L'Enseignement en France
Centre International d'Etudes Pedagogiques de Sevres
Jeannine Feneuille Inspecteur General de l'Education

La formazione professionale in Italia
CEDEFOP Berlin, 1985
Studio redatto da
ISBN 92-825-6909-8

Vocational Training in Italy
CEDEFOP Berlin 1985
ISFOL -Instituto per lo sviluppo della formazione professionale
ISBN 92-825-7951-4

Vocational Training in the United Kingdom
CEDEFOP Berlin 1985
Steve Sharples Vikki Carty
ISBN 92-825-6855-5

Vocational Training in Ireland
CEDEFOP, Berlin 1985
Candy Murphy Roy Dooney Dr Paul Dunne
ISBN 92-825-6937-3

Descripcion del sistema de formacion profesional Espana
Bellaterra, junio 1985
Candido Genovard,Jaime Sarramona,Jose Luis Crespan,Ferran Ferrer
ISBN 92-825-6352-9

Vocational Training in Portugal
CEDEFOP Berlin 1985
Artur Mota, Eduardo Marcal Grilo, Maria Candida Soares
ISBN 92-825-6530-0

Descricao do sistema de formacao profissional Portugal
CEDEFOP Berlin 1985
Artur Mota Eduardo Marcal Grilo Maria Candida Soares
ISBN 92-825-6356-1

Vocational Training in Spain
CEDEFOP, Berlin 1985
Dr Candido Genovard Dr Jaime Sarramona Dr Jose Luis Crespan Dr Ferran Ferre
ISBN 92-825-6531-9

Vocational training systems in the Member States of the European Community
Comparative Study CEDEFOP Guide
CEDEFOP Berlin, 1984
Rudolf J Schmitt/Ron Johnson
ISBN 92-825-2639-9

The classification of skilled workers in the Member States of the European Community
CEDEFOP, Berlin 1981
Oliver Bertrand Pierre Marechal
ISBN 92-825-2330-6

Clerical and commmercial sector qualifications in the United Kingdom,
France and Germany
CEDEFOP Document, Berlin 1986
Hilary Steedman
ISBN 92-825-6527-0

U90 - Danish Educational Planning and Policy in a Social Context at the End
of the 20th Century
Ministry of Education 1978
Central Council of Education - Denmark
ISBN 87-569-6575-3

The Education structures in the Member States of the European Communities
Eurydice European Unit 1986
Commission of the European Communities
ISBN 92-825-7543-8

Teaching and Training the Handicapped through the new Information Technology
Published by CEC at 5.90 UKL
Jorgen Hansen
ISBN 92 825 4573 3

Coombe Lodge Report - Vocational Qualifications in Five Countries
- Volume 19 Number 5 1986
Study sponsored by Department of Education & Science and MSC
Russ Russell, G Cardell, A Herbert, L Blokzijl, T Knobbout, W Reisse
ISSN 0305-8441

Recognition of Higher Education Diplomas
House of Lords Session 1985-86 22nd Report - HMSO
Select Committee on the European Communities - House of Lords
ISBN 0 10 424086 5

British Qualifications - 19th Edition
Comprehensive guide to educational, technical, professional &
academic qualifications in Britain
Publishers - Kogan Page
ISBN 1 85091 696 9 (P/B)

Reconnaissances et Validation des Acquis
Centre Inffo - Le Centre pour le developpement de l'information
Ann-Marie Lucas, Josette Pasquier Bernard Lietard

C.A.P. COUVERTURE - Referentiel du Diplome
Direction des Lycees et Colleges, Paris - Juin 1988
Ministere de l'Education Nationale de la Recherche et des Sports

B.E.P. Travaux Publics (ouvrages d'Art)
Direction des Lycees et Colleges, Paris (Michel Lucius) - Juin 1988
Ministere de l'Education Nationale de la Recherche et des Sports

Travaux Publics - Baccalaureat Professionnel
Direction des Lycees et Colleges, Paris (Michel Lucius) - Mai 1988
Ministere de l'Education Nationale, Paris

Liste ds Diplomes CAP BEP BP BT BTN BTS - de l'enseignement technologique
institutes le plan national et relevant de la · competence des commissions
Direction des Lycees et Colleges, Paris - 1 Sep 1988
Ministere de l'Education, Paris

Commission Technique D'Homologation des Titres et Diplomes de
l'enseignement Technologique
Brochure No 1478 - Enseignement Technologique, homologation des titres et diplomes
- 25 F

The integration of young people in society and working life
Published in French - La Documentation Francaise. German and English versions published by CEDEFOP
Bertrand Schwartz

ONISEP - Fiches BAC Professionnels - 1987
Code 06 G 9671 - Plan de classement: ENS 4454 80 Autodoc: A3-1

Standard Occupational Classification Volume 1 - Introduction Structure and Definition of Major, Minor and Unit Groups
Government Statistical Service - October 1988
Steering Groups - see Notes

Thesaurus formacode domaines de formation
Centre inffo Publications - 1986
Centre inffo - formacode

Teaching Staff in Dutch vocational education
Report drawn up at request of CEDEFOP - Berlin 1983
Dr Hans M C Schellekens
ISBN 92-825-3806-0

The vocational trainer of young people in the United Kingdom
Report drawn up at the request of CEDEFOP - Berlin 1983
Michael J Kelly
ISBN 92-825-3811-7

Vocational training personnel in Belgium - Situation, training and prospects
Report drawn up at the request of CEDEFOP - Berlin 1983
Ernest Carlier
ISBN 92-825-3797-8

Trainers and teachers in vocational training in the Federal Republic of Germany
Report drawn up at request of CEDEFOP - Berlin 1983
Beate Krais Marlies Krebstakies Max-Planck-Institut
ISBN 92-825-3814-1

Vocational training staff in Denmark
Report drawn up at the request of CEDEFOP - Berlin 1983
Else Koefoed (SEL) - State Institution for Teacher Training
ISBN 92-825-3804-4

Vocational training staff in Italy - Current situation and future trends
Report drawn up at the request of CEDEFOP - Berlin 1983
Centre Studi Investimenti Sociali (CENSIS) - Roma 1982
ISBN 92-825-3799-4

The vocational trainer of young people in Ireland
Report drawn up at the request of CEDEFOP - Berlin 1983
Sue Leigh Doyle Brenda McGennis AnCO - The Industrial Training Authority
ISBN 92-825-3809-5

Teaching personnel in initial vocational training in France
(Conditions of service, qualifications, training tracks)
Report drawn up by CEDEFOP - Berlin 1983
A Coqblin A Quincy (ONISEP)
ISBN 92-825-3802-8

Student Yearbook & Career Directory - 1987 Edition
Published by Student Yearbook & Career Directory, Dublin
Editors Joseph Duddy & Richard Keane
ISBN 0 950894001

International Guide to Qualifications in Education
2nd Edition 1987 Mansell
British Council
ISBN 0 7201 1848.4

Social Europe - Supplement 4/87 - Educational and vocational · guidance services for the 14-25 age-group in the European Community
Commission of the European Communities
Directorate General for Employment, Social Affairs and Education
ISBN 92-825-8008-3

Higher Education in the European Community - Recognition of study abroad in the European Community
Commission of the European Communities
Fritz Dalichow and Ulrich Teichler
ISBN 92-825-6434-7

De beroepsopleiding in Nederland
Ministerie van Onderwijs en Wetenschappen, Den Haag, 1986
W S Baars
ISBN 92-825-8469-0

The Greek Education System
Commission of the European Communities
Eurydice National Unit, Directorate of European Communities, Athens
ISBN 92-825-6742-7

Vocational education and training in Denmark
Ministry of Education, Directorate for Vocational Education, Hojbro Plads, DK-1200 Copenhagen K, Denmark

Europe without Frontiers - Completing the Internal Market - Deadline 92
Office for Official Publications of the European Communities - L-- 2985 Luxembourg
ISBN 92-825-8309-0

Realisation de la Liberte d'Etablissement et de la libre · prestation des Services
Directives du Conseil, recommandations et communications de la Commission
Communautes europeennes Commission

Education & Societe - les defis de l'an 2000
La Decouverte - Le Monde de l'education - 1 Place Paul-Painleve - 75005 Paris
Jacques Lesourne
ISBN 2-7071-1746-3

Education-Economie quel system educatif pour la societe de l'an 2000?
rapport presente au ministre de l'Education nationale
Ministry of Education
ISBN 2-11-001950-6 ISSN 0981-3764

25 propositions pour l'avenir de l'ecole et des entreprises
La Documentation Francaise
presentees au ministre de l'Education nationale
ISBN 2-11-001869-0 ISSN 0981-3764

Commissariart General du Plan - Ecole de la Deuxieme Chance - Deuxieme Chance de l'Ecole - former des professionnels pour le 21e siecle
La Formation Professionnelle a l'etranger - quels enseignements pour la France?
Jean-Pierre Jallade - Institut europeen de'education et de politique socia
ISBN 2-11-001935-2

NCEA - Directory of Approved Courses in Higher Education - Sixth Edition -January 1989
National Council for Educational Awards, Ireland
ISBN 0 905717 29 5

A Guide to Working in a Europe without Frontiers
Commission of the European Communities
Jean-Claude Seche Preface by Jacques Delors
ISBN 92-825-8067-9

Miniksterio de Trabajo y Seguridad Social
Direccio General de Empleo, Madrid

Le Systeme d'Enseignement en Grece - Version revisee 1988
Unite Europeenne d'Eurydice, Bruxelles - Unite Grecque d'Eurydice, Athenes
ISBN 2-87116-123-2

The professions in the European Community - Towards freedom of movement and mutual recognition of qualifications
Commission of the European Communities - European perspectives Brussels
J P de Crayencour
ISBN 92-825-2791-3

Education and Training/Statistics in Europe
Eurostat
The Statistical Office
ISBN 92-825-5465-1

A Guide to Working in a Europe without Frontiers
Commission of the European Communities
Jean-Claude Seche
ISBN 92-825-8067-9

BAC...OU PAS BAC.. QUE FAIRE APRES?
Les Dossiers de l'ONISEP
ONISEP
ISSN 0767-6646

Bac technologique.. ou pas.. que faire apres?
Les Dossiers de l'ONISEP
ONISEP

Youth Training in the EEC - House of Lords - Session 1983-84 - 24th Report
H M Stationery Office
Select Committee on the European Communities
ISBN 0 10 428284 3

Realisation de la liberte d'etablissement - et de la libre Prestation des services
Communautes europeennes - Commission
Directives du Conseil, recommandations et communications de la Commission
8258/1/1/1969/5

Thesaurus of Vocational Training
CEDEFOP
Jean Viet, Maison des sciences de l'Homme, Paris
ISBN 92-825-5932-7

Bildung und Wissenschaft
BW 1986 Nr.3-4(e)
Dr Norbert Krekeler
ISSN 0177-4212

APPENDIX 4 - INSTITUTIONS

Office National de l'Emploi,
ONEM
Rijksdienst voor Arbeidvoorziening, 7 Boulevard de l'Emporeur
Brussels B-1000
ONEM was set up in 1963 - administered by Management Board bringing together employers, trade unions and competent bodies (Min of Employment & Labour) to oversee the Belgian Government's Employment and Training activities.

Centre de Psychologie et d'Orientation Scolair
Ministere de l'Education Nationale et de la Jeunesse, 6 bd Royal
Luxembourg L-2910
46802-555
Vocational Training organised by the Ministry of National Education with "Chambre des Metiers" and "Chamber de Commerce"- responsible for recognition of professional qualifications & diplomas and supervision of vocational training.

National Institute of Economic & Social Research
NIESR
2 Dean Trench Street, Smith Square
LONDON SW1P 3HE
An independent research organisation which has conducted a number of comparative studies on vocational training in the UK, France and Germany.

Der Bundesminister fur Bildung und Wissenschaft
HeinemannstraBe 2
BONN 2 D-5300
02 28/57-1
Federal German Ministry of Education and Science.

European Institute of Education & Social Policy
Universite de Paris IX-Dauphine, Place du Marechal de Lattre de Tassigny
PARIS F-75116
(1) 47.27.06.41 et 45.05.14

Le Centre International d'Etudes Pedagogiques de Sevres
CIEP
1 Avenue Leon Journault
SEVRES 92310

Istituto per lo sviluppo della formazione professionale
ISFOL
Via Bartolomeo Eustachio 8
ROME 1-00161
Institute for Development of Vocational Training of Workers set up in 1974 as public body for providing advice and technical assistance to Vocational Training following transfer of responsibility for this sector to the regions.

British Association for Commercial & Industrial Education
BACIE
16 Park Crescent
LONDON W1N 4AP
01-636 5351
BACIE is an educational charity registered No 313284 and a company limited by guarantee registered in England No 503940

Foras Aiseanna Saothair
FAS
27-33 Upper Baggot Street
DUBLIN 4
(01) 685777
The Training and Employment Authority of Ireland is responsible for apprenticeship in conjunction with the Department of Education, also offers wide range of short training courses which are certified e.g. City & Guilds, EOLAS (welding)

Instituto Italiano di Cultura
39 Belgrave Square
LONDON SW1X 8NX
01-235 1461
Source of information about Italian Education and Training

Instituto do Emprego e Formacao Profissional
Av. Jose Malhoa, 11
LISBON 1000
726 25 36

Centre d'etudes et de recherches sur les Qualifications
CEREQ
9 rue Sextius Michel
PARIS 75015
Research Centre for Occupational and Training Analysis? They have also conducted international studies.

European Foundation...Living Working Conditions....SEE NOTES
Laughlinstown House, Shankill
DUBLIN
01.826888
European Foundation for the Improvement of Living and Working Conditions - an institution established by the Commission of the European Communities

European Foundation of National Engineering Occupations
4 rue de la mission marchand
PARIS 75016
(1) 4224 91 43
This organisation is investigating the notion of a vocational pass.

Commission of the European Communities
CEC
200 rue de la Loi
BRUSSELS
010 322 235 1111
Regulates recognition of banks/other countries/properly supervised funded-see 77/780/EEC in OJ No l322,17.12.1977 p30 and 86/524 in OJ No L309,4.11.86,p15 aimed at adoption by 1 June 1989. This is draft law relating to talking up/pursuit of business of credit institutions and amending

University Information
200 rue e la Loi
BRUSSELS 1040
010 322 235 1111
Branch of CEC-LISTS European Documentation Centres EDC, Depositary Libraries DEP and European Refrnce Centres ERC: University of Surrey Library is an EDC, and the British Library Reference Section is a DEP, available to public

PCBB
Postbox 1585
S'Hertogen Bosch
NL 5200 BP
010 31 73124011
This is an Education/Training Research Institute

European Employers Federation
UNICE
40 Rue joseph du
1040 BRUSSELS
010 322 237 6511
Open 9-12.30 and 2-5.30 each weekday

The Further Education Staff College
FESC
Coombe Lodge, Blagdon
BRISTOL BS18 6RG
0761 62503
Staff tutor at the Management Development Centre for Public Sector Further & Higher Education (Geoffrey Melling - Director)

Employment Department - Training Agency
ED-TA
Moorfoot
SHEFFIELD S1 4PQ
0742 703497
Body responsible for the Government Training Programmes in Great Britain

Commission of the European Communities
CEC DG-V
200 rue de la Loi
BRUSSELS 1040
010 322 235 7202
DG-V is the Directorate responsible for Education, Employment and Social Affairs

Commission of the European Communities
CEC-DGIII
200 rue de la Loi
BRUSSELS 1040
010 322 235 7202
DG-III - This Directorate is responsible for Industrial matters, including the right of establishment and to offer services

Bundesministerium fur Wirtschaft
76 Villemombler Strasse
BONN 1 D-5300
010 49 228 615 2566
Federal German Ministry for Industry

Ministerie van Onderwijs en Wetenschappen
Postbus 25000
ZOETERMEER
NL-2700 LZ
Netherlands Ministry of Education and Science

European Centre for the Development of Vocational Training
CEDEFOP
Bundesallee 22
1 BERLIN 15
03088 41 20
European Centre set up by the Commission of the European Communities for Research and Information in Vocational Training

Bundesinstitut fur Berufsbildung
BIBB
Fehrbelliner Platz 3
BERLIN 31 D-1000
010 4930 86831
Autonomous parliament-Main Committee/Employers 11 votes/Workers & Employees 11 votes/Lander 11 votes/Federal Government 11 votes. Advisory Capacity:Head Assocns of Local Authorities, Federal Labour Office, Secretary General. Staff of 300 Berlin-Staff of 50 in Bonn.

Le Centre pour le developpement de l'information
CENTRE INFFO
Tour Europe, cedex 07
PARIS La Defense 92080
47 78 13 50
Centre for the development of information

National Council for Educational Awards
NCEA
26 Mountjoy Square
DUBLIN 1
(01) 741526/7/8
Director - Padraig MacDiarmada. Under NCEA Act 1979 Council approves and recognises courses in designated Institutions and confers National Awards on those successfully completed approved courses.

Office National d'Information
ONISEP
46-52, rue Albert 75013
PARIS Cedex 13 75635
(1) 45.83.32.21
PO/Pr le Chef du Department, Ministry of Education, ONISEP, Paris.

National Council for Vocational Qualifications
NCVQ
222 Euston Road
LONDON NW1 2BZ
01 387 9898
NCVQ was set up in 1986 to ensure that there are National Vocational Qualifications for all occupational areas by 1991. Peter Thompson (Chief Executive)

Ministerio de Trabajo y Seguridad Social
P10 Baroja, 6
MADRID
28009
CJFP - The General Vocational Training Council - is a tri-partite body to MTSS, consists of 26 representatives of trade unions & employers associations & 13 representatives of the central administration.

The Eurydice European Unit
EURYDICE
Rue Archimede 17/B 17
BRUSSELS B-1040
(02) 230.03.82
The Education Information Network in the European Community

EPIC
Education Policy Information Centre
The Mere, Upton Park
SLOUGH SL1 2DQ
0753-74123
Sponsored by the Department of Education and Science, EPIC Europe is the official link to the EURYDICE Educational Policy Information Network of the European Community.